





THE AEROPLANE



Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O. AS A NEWSPAPER.]

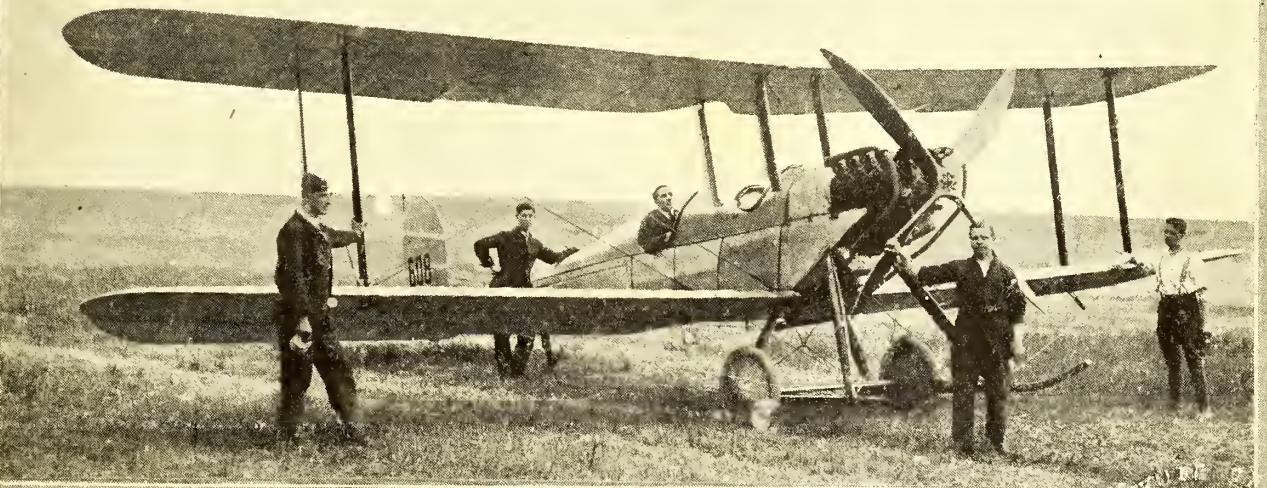
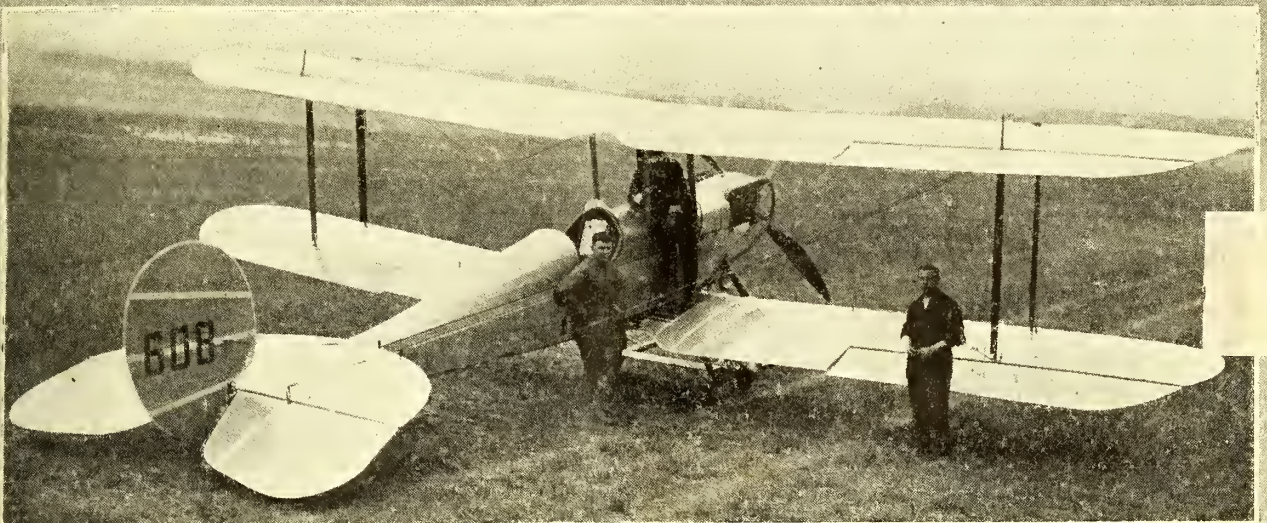
WEDNESDAY, JULY 1, 1914.

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"R.E.I." now officially 608, the inherently stable aeroplane of which so much has been heard lately. It will be noted that it differs little from standard B.E. type, except in having only four rows of interplane struts, and a much bigger rudder, with a balancing section forward of the rudder tube. The stability is largely obtained by correct adjustment of the dihedral angle of the wings, and of the tail plane.

These Photographs and others of the Aeroplanes at the Concentration Camp were taken by Mr. J. Fuller, Amesbury, Salisbury Plain.

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A Trip to "The Plain"—and Some Reflections.

There is, of course, only one "Plain" in England—that which takes its name from the ancient city of Salisbury. The Royal Flying Corps (Military Wing)—which is now without a Naval Wing—having nearly finished the period set for the Concentration Camp at Netheravon, it seemed that one should pay another visit to that official health-resort before it ceased to be. Unfortunately, it so happened that the day chosen happened to be last Friday, when certain people of importance were pleased to make a visitation to the Camp, so that instead of meandering peacefully around watching the various squadrons at their daily tasks one discovered everyone very much *affairé*.

Before I actually arrived on the Plain I had no idea anything out of the ordinary was going to happen, but, meeting one of my acquaintances, I was informed that there was a "*hellofa-tamasha*" toward. Having mislaid my Hindustani dictionary, I cannot give the correct translation of this quaint phrase, but I gather that it means some kind of official occasion attended by much fuss and little practical utility. Further inquiry elicited the fact that the Concentration Camp was to be visited by Mr. Asquith, Prime Minister and Secretary of State for War, attended by various other personages, including Colonel J. E. B. Seely, ex-Secretary of State for War ("thank Heaven"), "and"—observed another officer—"that fellow who writes drivel in a paper called THE AEROPLANE—which shows all the thanks one gets from some people for trying to keep them from breaking their silly necks. Being coupled with Colonel Seely in this way is really enough to make one give up agitating for more and better machines for the R.F.C. However, when later on news came in of yet another B.E. rudder breaking in the air, happily without fatal results, perhaps the said officer may have begun to realise that just as there may be method in madness, so there may be sound sense disguised in drivel.

The first part of the official proceedings consisted in an aerial reconnaissance conducted from a temporary landing ground at Shipton Bellinger. There happened to be about 5,000 men of the 2nd Cavalry Brigade and 7th Infantry Brigade out on the Plain concerned in certain manoeuvres connected with promotion examinations, so the R.F.C. went and reconnoitred them on its own account. The aeroplanes (about 20 in all) returned to Netheravon about mid-day, and shortly afterwards General Sir David Henderson and Colonel Sykes arrived in cars with Mr. Asquith and his party from the landing ground. They proceeded to inspect the permanent sheds of Squadrons 3 and 4, and then adjourned for lunch.

An Aerial Parade.

Afterwards came the inspection of the machines. About fifteen or twenty B.E.s were drawn up in line in front of the temporary sheds, following them were four "short-horn" Maurice Farman's, five tandem Blériots, and four Henri Farman's—about thirty machines in all, not fifty or eighty as variously reported—and a very pretty show they made all down the hill below the permanent sheds. One after another they went off at intervals of a minute, turned to the right, fetched a compass about the Plain out of sight round by Upavon, and landed on the other side of the hill-top beyond the permanent sheds, where they were all drawn up in line again, so that when the official party had reached the crest of

the hill they found nearly all the same thirty machines in a row awaiting them. There was, of course, no intent to deceive, but the manoeuvre somehow suggested Colonel Seely's method of counting aeroplanes, and may account for the reports that twice as many machines were out as there were in reality.

Meantime, Colonel Seely arrived by car, and stood on a mound of chalk to be photographed by the attendant press, gazing proudly at the long line of machines, as who should say, "Alone I did it." I gather that he also went for a trip in an aeroplane, though press opinions seem divided as to whether he arrived from Farnborough by air, or made a short flight at Netheravon, or flew thence to Upavon. Anyhow, he went down in a car to the Mess to tea, doubtless to entertain the young officers with tales of his aerial exploits. If Colonel Seely goes on as he has begun he will soon be worthy of his suggested titles of "The Champion Air-tripper, or, The Joy-ride King." Considering all he has done for the R.F.C.—in theory—I cannot understand why Colonel Seely should be the butt of so many jests. I fear me that aviators are an ungrateful set.

The Making of Pilots.

The great ones of the earth having departed it seemed good to spend the rest of the afternoon quietly watching the making of flying-officers at the Central Flying School, but here, again, one found all the machines lined up for a visitation, and one learned that Mr. Asquith's party had just arrived, and were even then inspecting the School.

However, after a time they departed, and the School's work resumed its normal course. Apparently, the officers on probation in this course are unusually good, or else I found them on a good day, for the flying was quite above the normal quality despite a strong, puffy wind and nasty heat-bumps from the ground. It is possible also that the great experience gained by the staff of the School since it was first established may have resulted in a system being evolved which produces good pilots in a short time. One only wishes that a book on the training of pilots could be written by some of the C.F.S. instructors; it would be of high value.

Apparently, dual controls, long held in disfavour by some instructors, are coming into more use at the School, and I was shown a particularly simple device for throwing the pupil's elevator lever out of gear. This had been designed and fitted at the School, and seemed to work excellently. It is, however, advisable that the pupil's rudder-bar, and warp or aileron control, should also be disconnectable, or, at least, fitted with springs or friction gear, so that the instructor can overcome a false manoeuvre when desired.

One notices that the Gnome-engined B.E.s used at the C.F.S. have now been fitted with tail fins, and, apparently, with stiffer rudder tubes, but they still look as if bigger fins would be an advantage. With the tail fins these bull-nosed little machines, with their brown bodies, look more like gold-fish than ever.

Enlargements at the C.F.S.

A couple of big new sheds have been built since I was last at Upavon, so evidently it is intended that the School shall expand still further. It has done so well in the past that one hopes it will continue to extend its activities. Also, the ex-

pansion looks hopeful for the R.F.C., for the School is quite well able to keep the existing Squadrons supplied with officers, so that any expansion of the supply must mean an intended increase in the demand, which probably means new squadrons before long.

Having seen and heard much of interest, of which it is not permitted to write, I departed more than ever impressed with the good work the School is doing. As I came away I counted fourteen machines in the air in the particular section of the sky to be seen without turning one's head, and there were probably quite as many, if not more, in other directions. On the way back to Amesbury aeroplanes seemed more frequent in the sky than birds.

Altogether, the two establishments at Netheravon and Upavon give one a pleasing feeling that excellent progress is being made. One only hopes that the Government realises that good as that progress is, the whole scheme of the R.F.C. is far too small, and should be on a scale commensurate with our military responsibilities, and not merely with our little Expeditionary Force.

Of course, it is far better to start with a small flying corps and bring it to a high state of efficiency than it is to buy quantities of machines and leave them to fall to pieces for lack of attention, as the French have done. But it is better still to adopt the German system of starting out with a really big scheme and building it up on a sound foundation. With the brains and experience now possessed by the British aeroplane industry we could easily beat the world at aeroplane building if sufficient encouragement were forthcoming from the financial side of the War Office.

The Inherently Stable Machine.

In the course of casual visits such as these one picks up ideas which when linked up with other ideas acquired from people in the "trade" suggest interesting matter for consideration. For instance, there seems to be, at last, a distinct growth of feeling in favour of inherently stable machines. A number of officers have been flying the inherently stable B.E., and though they are pilots of quite different types they agree as to its desirability.

In practice this machine, when once fairly in the air, needs no control except directionally by means of the rudder. When the throttle is opened wide it climbs, when it is throttled down it finds its own gliding angle. When carefully handled it appears easy to land, but on occasion it has landed at its natural gliding angle, with dire results to the chassis. This has probably been due to its being slower on its longitudinal control than an ordinary B.E., which seems natural. As has been pointed out before, it seems better to abolish the elevator flaps altogether and move the whole tail-plane, arranging it so that when let alone it will come back to the "stability" position. Thus one can have complete "controllability" or complete "stability" as desired without one interfering with the other.

Even the most experienced and skilful pilots seem to agree that this type of machine will save a great deal of mental and physical fatigue on active service, besides giving the pilot an opportunity of making his own observations as a check on the observer-passenger. Naturally one is glad to see this type of machine coming into use, but it is a trifle annoying that it should have been so long in arriving. If proper encouragement had been given to the proper people we could have had this type at least a year ago and probably two years ago. As it was, some of the best brains in this country were either squeezed out of the business or were wasted on merely reproducing Government designs, which designs, be it noted, have proved as defective and as deadly as those who knew most about aeroplanes prophesied they would be.

The Basis of Criticism.

Here I would state that my criticisms of the various aeroplanes built by the Royal Aircraft Factory have not been merely the drivelling of a superficial journalist, but have been the concentration of numerous opinions on the general design and workmanship of these machines given by experienced designers, constructors, and mechanics, nearly all of whom have had far more general engineering experience than the de-

signers of the B.E.s. The mere fact that the criticisms published in this paper have been only too fatally justified by the failures of the machines in the exact ways prophesied shows that my technical information was correct.

We had another example of this on Friday last, when Captain Shepherd's rudder bent over, and the machine spiralled into the ground. Fortunately he and his passenger, Mr. Mulcahy-Morgan, escaped with a shaking. When a similar thing happened to the first experimental Sopwith tractor, Lieut. Spenser Grey, R.N., landed safely, because the big body prevented a spin, and afterwards such alterations were made in the rudder design that such a thing could never happen again in this type of machine. Yet here we have the R.F.C., already warned by the deaths of five or six people that neither the designs, workmanship, nor material of the Royal Aircraft Factory are to be trusted, going on using B.E.s with the old design of rudders and elevators. How long is this to be endured? And who is responsible for our flying-officers still using machines which are known to be defective?

One hears that the pilots have been warned not to use their controls too suddenly because elevators may bend and rudders may break, but that it is all right so long as one goes about it *doucement*. And, pray, who is going to think about being gentle with his controls on active service if he is dodging for his life to escape a faster hostile machine?

The Breaking of Pilots.

With all the great respect I hold for those at the head of the Royal Flying Corps, I cannot help feeling that they are making a very grave mistake in allowing the junior officers to be morally coerced into flying machines which are known to be defective. I say coerced advisedly, for even if pilots are given the option of flying or not, they cannot help feeling that refusal to fly will be set against them in their confidential reports. Surely it is better policy to stop all flying, and so deprive pilots of some practice, till the machines are put right, than it is to break the pilots' nerves by asking them to fly under such precarious conditions.

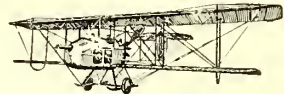
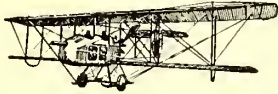
It will be remembered that the Navy ordered two B.E.s from the R.A.F. and that these were promptly condemned by the Naval engineers as unfit for use, on the scores of defective material, design, and workmanship. Since then the Navy has acquired a couple of B.E.s from the Hewlett and Blondeau firm. The material and work in these is wholly excellent, and the unsafe points in the design have been altered to bring them within reasonable distance of the Navy's requirements, though even now they are not regarded as having an unnecessarily high factor of safety. The result of making these machines reasonably safe is that their weight is materially increased and their speed is reduced from 73 down to 66 miles an hour. In other words the high speed of the B.E. is only obtained at the expense of safety.

The experiences with the rudders and elevators of the R.E.s justify grave doubts as to whether they are safe either. True, these defective members have been replaced by stronger ones, and they have ailerons instead of warping wings, but the designer who makes mistakes in such obvious things is more likely to make worse mistakes in more obscure places, and more than one experienced designer has told me that the only way to beat the R.E. with the same power plant is to make an unsafe machine.

Crede Expert?

Unfortunately there seems to be no really reliable authority to whom manufacturers, or the R.F.C., can go for reports on such matters, until such time as the Aeronautical Inspection Department grows to such an extent as to set up a testing plant of its own. The recent report of the Advisory Committee for Aeronautics on the breakage in B.E.3 which killed Captain Allen and Mr. Burroughs has entirely destroyed all faith in that body's freedom from bias. I have good reason for believing that the report as published contains certain minor alterations from the reports issued by the departments of the National Physical Laboratory which carried out the actual tests of the defective tube. It is said that these alterations subtly alter the impression given by the report as a whole and

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are calculated to deflect the reader's attention from the real point at issue, which is that the design was wrong to start with. If the influence of the Royal Aircraft Factory is to be allowed to affect either directly or indirectly the reports of such an august body, then Heaven help the R.F.C. pilots.

In the end the matter will resolve itself into direct opposition between the R.F.C. pilots and the R.A.F., but it seems as if there will have to be a good many bad smashes before things reach a climax. Officers and gentlemen do not cut girths or burn caps or commit other mutinous acts, whatever they may feel like doing. If the men had to fly the machines instead of the officers one could foresee a row of broken B.E. rudders and elevators neatly laid out in front of the sheds some morning. As it is the men are warned to treat the things as gently as possible for fear they may fall off when the machines are being moved.

Unfortunately some senior officers, who perhaps believe that

promotion comes from being on the right side of those with political influence, and who do little flying themselves, and then do it under the most favourable conditions, profess to believe that these machines are perfectly safe. It is, of course, impossible for mere flying officers to bring any countervailing influence to bear, even when supported by a proportion of flight commanders and squadron commanders. Consequently they have to fly in all weathers on active service on machines which are officially declared safe simply and only because of the influence of the producers of those machines. I think on the whole the American system of "graft" on a purely financial basis is preferable to our "personal influence" method of exalting oneself or saving one's face.

Ultimately the Aeronautical Inspection Department will have to settle the matter, and it will do so without fear or favour, so long as it is under the present staff, but one wonders just when the Augean stables will be swept.—C. G. G.

"B.E.s" in the House.

On June 25th, Mr. HUNT asked the Secretary of State for War if he would explain why so many accidents have occurred with the B.E. aeroplanes of the Army; why the rudder has no stays to strengthen it, and why the main spars of the machine have such large bolts drilled through them to take the strut sockets, when other types of machines do not have their spars weakened by having such large holes drilled through the main spars; and whether he will do away with the use of this type of machine in the Army?

Mr. BAKER: If the number of accidents in connection with B.E. aeroplanes appears to be large, that is because there is a large number of them in use and because they are continuously in the air. The details of construction are based on most careful and long-continued calculation, and the strength of these machines is in every way satisfactory. There is no intention of doing away with this type until it is superseded by some superior pattern.

Mr. HUNT: Is the hon. gentleman aware that Army officers have a great dislike to using this type of aeroplane and that they are considered very dangerous? Will he inquire about it? Is he aware that, instead of being tied in the ordinary manner, they are tied with holes drilled through the wood, which is what makes them dangerous, and will he inquire into the matter?

Mr. SPEAKER: I would suggest to the hon. member that he should incorporate his supplementary questions in his original questions, and then there would be an opportunity of making inquiry.

Mr. BAKER: I have already inquired into the matter, and I think that it is quite untrue that officers have any dislike to this kind of machine.

As if to give the lie direct to Mr. Baker, who is apparently a worthy successor to Colonel Seely, comes Captain G. S. Shepherd's smash on Friday last. His rudder broke some 30 or 40 ft. from the ground and the machine came down in a heap. He and his passenger, Lieut. T. W. Mulcahy-Morgan, happily escaped uninjured. It was only sheer good luck which prevented this from being another fatal accident due, like those of Mr. Arthur, Capt. Downer, Capt. Allen, and Mr. Burroughs, to B.E.s breaking in the air.

There are certainly a number of minor accidents on B.E.s due to there being "a large number of them in use and because they are continuously in the air," but the proportion of fatal accidents due to breakage under ordinary flying strains is out of all proportion to the number in use, as is the number of breakages without fatal results, and exceeds that of any other make which is used in anything like quantities—I exclude, of course, experimental makes, where one or two machines have been built and have broken. The B.E.s have collapsed though more carefully looked after than any other machines—thanks to the efficiency of the R.F.C.—yet their record compares very badly with that of the military Farmans and Blériots and Nieuports which are used and misused by the armies of every country in the world, and always shamefully neglected.

The "careful and long-continued calculations" have been proved in many points to be absolutely inaccurate and fal-

lacious, and have merely added to the tale of disaster, and "the strength of these machines" is in many ways most unsatisfactory. Mr. Baker departs as far from the truth as was Colonel Seely's habit when he states that officers do not dislike the B.E. on the grounds that it is dangerous. Very many of them do dislike it, but they dare not say so, for the sake of their careers in the Army.

In Memory of Mr. Hamel.

On Wednesday of last week a service was held in memory of the late Mr. Gustav Hamel at Grosvenor Chapel, South Audley Street. It was largely attended by people well known in various walks of Society. Admission to the church was by ticket, and one noted that many of those concerned with Mr. Hamel's work as an aviator were not invited to pay their respects to his memory.

One gathers that there is a proposal to found a fund for some permanent memorial to Mr. Hamel. One hopes that the idea of erecting a statue or any other memorial of a mineral nature will be abandoned. Far too much money is wasted on useless lumps of stone and metal which no one notices after looking at them once or twice. The endowment of a hospital bed is a better proposition, but a better one still, if a memorial is really necessary, is the foundation of a prize for the best invention of the year for the purpose of saving life in aerial navigation, or a fund for an annual lecture on means of saving life. Such an annual lecture, when published in the Press, might perhaps help to prevent a certain number of young pilots from losing their lives as unnecessarily as Mr. Hamel did.

Liverpool and Aviation.

At a meeting in Liverpool last week the Executive Committee of the Liverpool Flying Corps made a final report. It said that after negotiations with the War Office and Admiralty the Committee could not recommend any workable scheme for the formation of a local flying corps or the establishment of a local aviation centre. It was pointed out that the War Office could not guarantee certain desired local facilities. The Committee approached the Admiralty with a view to the establishment of a seaplane station. The scheme was not acceptable, and the Committee determined to discontinue their efforts. The report was adopted, and Messrs. W. E. and C. A. Cain were thanked for their offer to provide two aeroplanes. And so Liverpool, as an entity, retires from aviation. One hopes that more local support will now be given to Mr. Mell's private enterprise.

Joining the Royal Naval Air Service.

The number of inquiries which have come to this office from civilians wishing to join the Naval Air Service in consequence of the article which appeared last week suggests that the Air Department will be fairly busily occupied in selecting suitable candidates for some time to come. Those wishing for particulars as to the proper form of sending in applications, rates of pay and so forth, should write to the Director of the Air Department, The Admiralty, Whitehall, S.W., and should specify whether they wish for information as to joining the commissioned ranks of the R.N.A.S. or otherwise.

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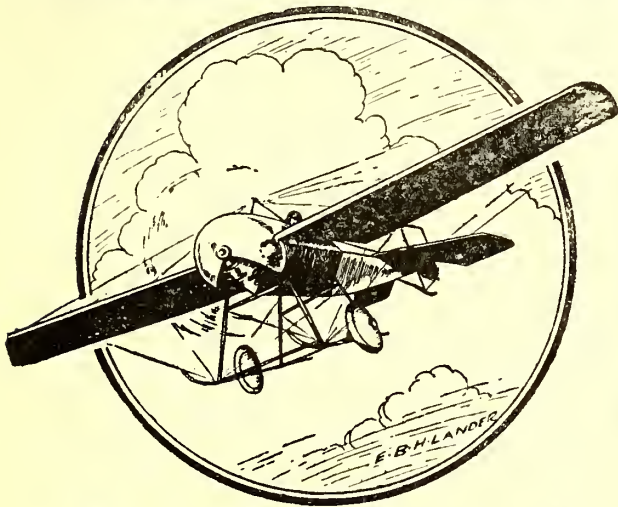
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Aeroplanes of the Future.—II.

BY W. H. SAYERS.

In the previous article under this title the general structural aspect of large aeroplanes was dealt with briefly and it was shown that it was possible with present materials and methods of construction to build machines of much larger dimensions than any yet existing.

When details of such large machines come to be considered it will be found that they will afford many more opportunities for saving weight by careful design than do present-day machines. For instance, the stresses in a wing spar between any two points of support are by no means uniform, and the section of the spar might be varied to suit the stress and keep the stress per square inch throughout the spar constant. This could, of course, be done with present machines; but with the small spars used now the saving so effected would be small and the extra cost and trouble considerable.

In somewhat similar ways a considerable amount of weight could be saved in many joints and clips, particularly in those places where in existing machines the stresses which are of most importance are those which may occur through careless handling or accident while on the ground and not to actual flying or landing loads. Also, there are many accessories, such as necessary instruments and certain parts of the control gear, whose weights do not in any way depend on the actual size or weight of the machine, so that one may conclude that the limits to the possible size of machines will be found even greater than those based on the consideration dealt with in the previous article, and also that the useful carrying capacity of the really big machine will be a distinctly larger proportion of its total weight than is the case with the smaller machines of to-day.

The possibility of securing greater aerodynamic efficiency in very large machines also exists; it may be found that large surfaces give higher efficiencies than small ones, though any gain in this way will probably be small; also, in certain cases at any rate, a considerable saving may be effected in the head resistance of fuselages or nacelles, as the minimum dimensions of these parts are dictated by those of the human form, and the complete "fairing off" of the lines of these parts will be easier to carry out in large machines.

Control Surface and Gearing.

On the other hand there will be certain features necessary in the large machines which do not have to be provided in smaller ones.

For instance, control surfaces will naturally increase in size proportionately to the rest of the machine, and will be too large for operation by direct muscular control, and some form of hydraulic or pneumatic operating gear may be found necessary. Possibly it may be found practicable to operate control surfaces by the aid of auxiliary surfaces which will bear the same relation to the control surfaces that the elevators of a normal machine do to the main planes. Such an arrangement has already been proposed, and is certainly possible, though it has been objected to on the ground that it is likely to introduce a lag between the movement of the pilot's control gear and that of the central surfaces themselves.

Such a lag can be minimised by careful design, and it must not be forgotten that as the size of machines increases so do their movements become slower, and the time lag necessarily introduced by the use of relays in the controls may therefore be less important than it would appear at first sight.

It may even be that owing to the slow movements of the large machine it will be found satisfactory simply to fit a reduction gear in the pilot's controls, thereby giving him the necessary power to move the large surfaces at a correspondingly reduced speed. In certain respects this arrangement would have many advantages over any system of servo-motors or auxiliary surfaces, as the reduction gear would prevent the violent use of controls and the attendant possibility of very great stresses on the machine due to its inertia, such as that tending to break off a fuselage or tail booms when flattening out after a dive. Also it could almost certainly be made absolutely reliable rather more easily than any other system.

It is fairly obvious that, whatever system of control gear is employed in machines of the kind we are considering, this question of controls is one of the very first importance and will demand much care and careful consideration of all the factors involved, and of all the stresses likely to be set up in a large machine when the controls are used.

Thus the double fuselage type of machine referred to in the previous article will have a very large moment of inertia laterally and her rolling and turning motions will be slow and stately. These movements will require large controlling forces to correct, and the violent application of the controls will set up great stresses in the structure between the two fuselages.

The designer will therefore have to consider just what combination of control surface areas and speed of operation thereof will give sufficient righting forces to bring the machine into control within the time in which it could reach a dangerous bank.

Power Plant Arrangements.

The arrangement of the power plant in multiple engine machines again presents certain quite interesting problems.

In most cases it will be essential to have some form of transmission gear between motors and propellers in order that the motors may be placed in positions easily accessible to the crew. Hitherto such transmissions as have been carried out have been by chains; but chain gears to transmit 200 to 500 h.p. over 6 ft. to 10 ft. centres are likely to be heavy and unsatisfactory, and cardan shafts and bevel gears are likely to be used for such work. Such transmission gears will, of course, have a very much less arduous task to perform than a car transmission, but on the other hand it will scarcely be possible to enclose the actual shaft in quite so solid and substantial a casing as is done with the car, and the arrangements to secure proper alignment of the shaft ends which carry the gears will require careful thought. It must not be forgotten that even the gear of the R.A.F. have proved unequal to the task of designing a universal joint capable of transmitting the output of a modern aero engine—and though one believes there are others who can make a better show, this matter of transmission gear will probably present certain difficulties.

In a two-engine twin-propeller machine it is desirable when flying on a straight course that both motors should run at the same speed, and there is, therefore, some advantage in coupling the two motors together, as has been done in the twin-engined Dorand biplane designed for the French Army at the French equivalent of the R.A.F.—Chalais-Meudon. But in the event of a motor failing completely the task of driving two propellers instead of one, as well as turning the idle engine, will reduce the speed and the available horse-power of the remaining motor to considerably below the normal.

Further, unless the propellers are one behind the other on the centre line of the machine, failure or partial failure of one motor will cause the machine to turn towards the side of the slower propeller. It will be possible to provide sufficient rudder power to overcome this turning tendency, even with one motor stopped, with an increase in drag which would be less important than the loss due to turning both propellers with the one motor, and it would obviously be useful to be able to vary the motor speeds independently for manoeuvring purposes.

Twin Propeller Problems.

The arrangement of both propellers on a common axis on the centre line of the machine is possible, and with the twin fuselage type of machine would not involve either open tail booms or a tractor screw, and may be found a solution of certain difficulties; but since the rear one of a pair of tandem propellers needs to be of coarser pitch than the front one, and will require more power to turn it at its full speed when the first is stationary than when it is running, this arrangement produces difficulties of its own, in as far as flying with one motor only is concerned. These difficulties should not be insuperable, and this arrangement may prove to be the best. In either case the two motors will have to be arranged to drive their own propellers independently, unless a two-speed gear-box

is fitted, which will allow both or either motor running at full speed to turn both propellers, at a reduced speed in the latter case.

Since the machine could naturally not be expected to fly as fast with half power as with both motors, the lower speed of

the propellers when driven by the one motor might be an actual advantage as tending to run the propellers with a reasonable slip and so give a better efficiency than would one propeller alone turning at the revolutions suited to the full-power speed of the machine.

The Trans-Atlantic Flight.

The following letter has been received from Lieut. John Porte, R.N., on Monday last:—

“Hammondsport, N.Y., June 19th, 1914.

“My dear Grey,—The Transatlantic flying boat is on its way to completion, and we hope to have it out for tests on Monday next. Its main dimensions are:—Length over all, 35 ft.; span of upper wing, 72 ft.; lower wing, 46 ft.; chord, 7 ft.; gap, 7 ft. 6 in. It has two Curtiss O-X motors of 90-h.p. each, mounted side by side between the wings. The other details you will see from the photographs, which Mr. Seely is very kindly sending you.

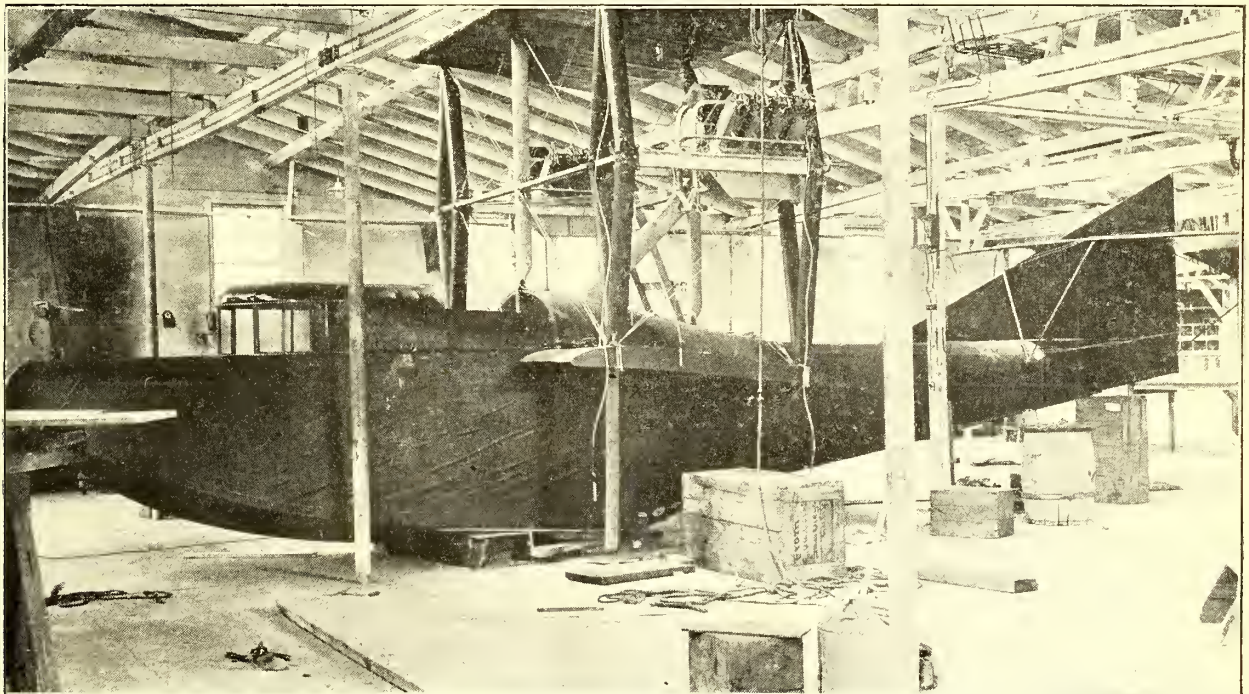
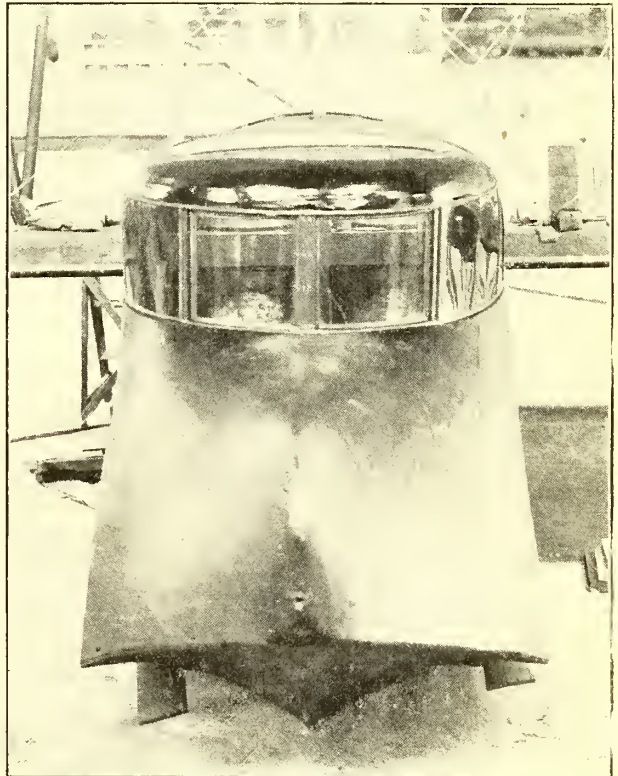
“If all goes well we shall leave Newfoundland about the 15th of July. This is only a guess, because we are still in the dark as to the lifting capacity of the machine. Still, I do not think we shall be much out in our calculations. As you have seen by the papers, we hope to go via the Azores, Spain, and then on to Plymouth; in which case, should we be successful, may I have the pleasure of seeing you at the latter place?—With kind regards, I am, yours sincerely,
(Signed) J. C. PORTE.”

Later advices by wire are that the Curtiss boat will leave for St. John's, Newfoundland, by boat on July 11th, and that the start of the flight will be made on July 20th.

Everyone will wish the plucky Irish officer success. His first stage, to the Azores, is 1,198 miles, and Herr Landemann has already done 1,200 miles without landing.

Ladies' Day at Hendon.

Saturday next, July 4th, will be “Ladies' Day” at Hendon. A speed handicap will take place for the Women's Aerial League Trophy, the race being across country to Bittacy Hill and back three times, each pilot having to take a lady passenger with him. It is hoped that Mrs. Buller will give demonstrations on her Caudron biplane.



The hull and engines of the Wanamaker-Curtiss Transatlantic Flying Boat. Note the engine struts and the pilot's cabin. Above the hull is shown bow on.

Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," Friday, June 26th:—
Regular Forces.—Establishments.—Royal Flying Corps (Military Wing).—Sec. Lieut. L. A. Bryan, South Irish Horse, is appointed to the Reserve (May 29th).

NAVAL.

The following appointments were made at the Admiralty on June 24th.—Lieuts. A. M. Longmore and J. W. Seddon to be acting lieut.-commanders, to date June 24.

* * *

So far as one can gather, every available machine of the Royal Naval Air Service is to concentrate at Calshot as early as possible this month, so as to make a really impressive display at the Fleet Mobilisation.

* * *

It is reported from Dundee that all the personnel and machines are to leave for the month of July to engage in a naval concentration base at Calshot. No flying has been done, and it is said that the three Short machines are dismantled to be railed to Calshot.

* * *

It is reported that the Admiralty have acquired the large Congress Hall which the Salvation Army erected at Aldwyck with a view to transporting it to Sheerness, where it will serve to accommodate seaplanes. Doubtless the castellated proscenium (if retained) will serve as a blind to invaders. It is also rumoured that a certain great publishing firm attempted to acquire this shed from the Admiralty at a considerably enhanced price, but without avail, which goes to show that we have a Government department with at least the elements of business instinct.

* * *

The First Lord of the Admiralty arrived at Portsmouth on Saturday and went on board the "Enchantress." He remained at Portsmouth until Sunday, when he visited Calshot Air Station, returning to Portsmouth in the evening.

* * *

At Eastchurch on Monday No. 154 D.F.W. (100-h.p. Mercédès) was the only naval machine flying, and on Tuesday only No. 43 Bristol tractor (80-h.p. Gnome) flew. On Wednesday, Shorts Nos. 3 and 10 (80 and 140-h.p. Gnomes), Bristol tractors Nos. 43 and 153 (80-h.p. Gnomes), M. Farmans Nos. 70 and 185 (70-h.p. Renault), H. Farman No. 31 (70-h.p. Gnome), and B.E. No. 49 were out. On Wednesday, Bristols Nos. 43 and 153, B.E. No. 50, M. Farmans Nos. 70 and 146, D.F.W. No. 154, Sopwith No. 103 (80-h.p. Gnome), and Shorts Nos. 3 and 66, the latter a gun-carrier. The Civil Lord of the Admiralty, Sir Francis Hopwood, paid a visit of inspection and accompanied Commander Samson on a flight in a Maurice Farman. On Friday, Avro No. 120 (80 h.p.), B.E. No. 50, and M. Farman No. 70 were flying. Mr. Gordon Bell, with Mr. Faïre as passenger, made tests of a new side-by-side two-seater Short for the Naval Air Service. On Saturday, M. Farman No. 146 and Bristol tractor No. 43 flew. No. 21 Short (100-h.p. Gnome) flew over from Grain.

At Yarmouth weather conditions have been extremely unfavourable of late, and consequently the machines have, with few exceptions, left the sheds only for engine trials. The land-going Maurice Farman, which has done so much flying in the vicinity, has been dismantled and sent to the Aircraft Co. for overhaul.

On June 16th, Capt. Fawcett, R.M.L.I., was out on H. Farman 143, with Major Carrol, of the Norfolk Regt., as passenger. On the 17th, Sub-Lieut. Kershaw, R.N.A.S., took out the 120-h.p. H. Farman for a trial spin, this being his first flight with the double engines; he made an excellent landing. Later, Lieut. Bone, R.N., was out on H. Farman 142, flying high and banking steeply.

It is understood that all machines are undergoing a thorough overhaul preparatory to flying south to Calshot to take part in the big Naval Review this month.

* * *

On Tuesday at Calshot the fourth of six Sopwith seaplanes for the Greek Navy was tested at Woolston, and on Thursday the twin-float Sopwith (100 Anzani), and the Sopwith bat-boat were both flying during the day. Lt Bigsworth was flying at night over Southampton Water, with the aid of a big headlight.

MILITARY.

The following communiqué has been received:—

Royal Flying Corps (Military Wing)—Diary of work for week ending June 20th, 1914.

Concentration Camp, Netheravon.—Headquarters, Headquarter Flight, Aircraft Park, Nos. 2, 3, 4, 5 and 6 Squadrons.

The training scheme, including Aircraft Reconnaissances, M.T. Convoy runs, experiments, lectures, conferences and committees was continued daily throughout the week. The aircraft exercises consisted of locating the Headquarters of units, in searching lines of advance, and in estimating the length of columns on the road.

The M.T. carried out several convoy runs by night.

It has only been necessary to deviate from the fixed programme on one occasion. This was in consequence of the prevalence of a thick ground mist.

The evenings from 6 onwards are devoted to games and athletics.

No. 2 Squadron won the inter-Squadron Football Cup. The annual sports of the Royal Flying Corps (Military Wing) took place on the 20th. The annual dinner of the Warrant Officers and Sergeants took place at the Holborn Restaurant, London, on the 13th instant. Sergeant-Major Ramsay, No. 3 Squadron, the senior warrant officer, was in the chair. General David Henderson and Colonel Sykes were amongst the many officer guests present.

Nos. 1 and 7 Squadrons, Farnborough.—The organisation of these was continued at Farnborough.

War Office, June 24th, 1914.



Two of the Blériot flight of No. 3 Squadron ready to start. A Maurice Farman is rising in the distance.



THE
GREAT

AERIAL DERBY

THE SPEED CONTEST AND
THE HANDICAP RACE

WINNERS USED:

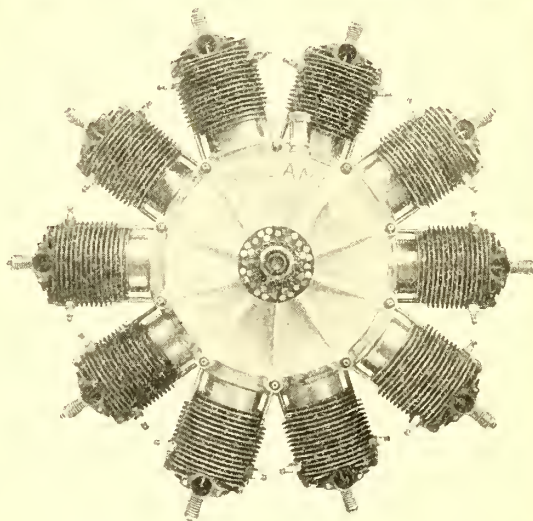
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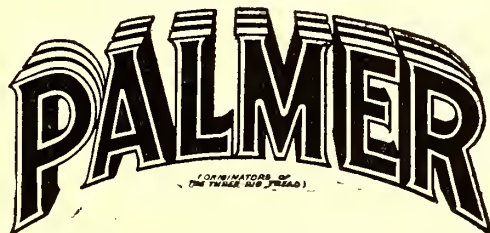
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MAY WE HAVE YOUR ENQUIRIES?

On Friday last the Prime Minister and Secretary of State or War visited the R.F.C. Concentration Camp at Netheravon. Prior to doing so, he witnessed reconnaissance work by some 30 machines from Beacon Hill. At Netheravon about 30 machines, including 5 Blériots, 4 Henri Farmans and 4 Maurice Farmans, were drawn up in line for inspection, and were then flown off at intervals of a minute. Later, Mr. Asquith and suite visited the Central Flying School at Upavon and inspected 30 or 40 more machines.

* * *

Distinguished visitors attended the R.F.C. Concentration Camp on Monday last. The First Lord of the Admiralty arrived early. Earl Roberts, accompanied by his daughter, arrived by motor from Ascot. The Field-Marshal distributed the prizes won at the recent sports of the Royal Flying Corps. He was received by Colonel Sykes, the Commandant, and was conducted by the latter through some of the hangars. Afterwards there arrived foreign military attachés who had accepted the invitation of the Government to visit the camp. Among them were Major Count Greppi (Italy), Major M. Renner (Germany), Colonel Saburo Inagaki, Major S. Tanikawa, and Captain Stubuya (Japan), Lieut.-Colonel Julio Vicens (Spain), Lieut.-Colonel George O. Squier and Captain Wood ((United States of America), Major Koloman-Horváth (Austria-Hungary), and Commandant Maton. These distinguished visitors were under the charge of Colonel A. G. Dallas and Colonel H. S. Sloman, General Staff Officers, War Office; Major B. W. B. Bowdler, R.E., and Major W. S. Brancker, R.A., represented the Director-General of Military Aeronautics.

Lord Roberts and the attachés lunched with the officers of Squadrons 3 and 4, and in the afternoon between 30 and 40 machines—representing the full available strength of our military air power—flew for the delectation of our foreign visitors.

* * *

Major Becke, O.C. No. 6 Squadron, was out on a single-seater R.E. on Wednesday in an attempt at the height record. He reached 18,000 ft., but unfortunately ran out of petrol. The machine he was using only held 25 gallons of petrol.

The constructional details of the R.E.s are reported to be very indifferent, and come in for some trenchant criticism from the more experienced air-mechanics of the R.F.C.

* * *

One gathers that all rudders on B.E. biplanes have been changed since Capt. Shepherd's smash on Friday, when his rudder bent over and caused a spiral dive. One would be glad to know why the change was not made before. A few simple stay-wires would, at any rate, increase the insurance value of the pilots' lives.

AUSTRALIA.

On May 18th, at Melbourne, Lieut. Harrison, of the Commonwealth Flying Corps, after evolving over the bay at the landing of the Governor-General, took Major Whyte as passenger and flew a distance of over 200 miles with him, 110 miles of this non-stop. The destination is not given in the local Press. Lieut. Petre also flew over Melbourne Bay on the same day.

FRANCE.

On June 24th escadrille No. 17, commanded by Lieut. Migaud, flew from Etampes to Dijon. When passing Bridon they picked up Sergeant Vinel, who had made the journey earlier in the morning. Passengers were carried in all the machines.

On the following day, Sergt. Bridon and Quartermaster Hecfeuille, accompanied by their mechanics, flew on to Douai, covering the 400 kms. in the course of the morning, in spite of a bad wind. The whole escadrille is mounted on Bréguet biplanes built in 1912!

On June 27th Deperdussin escadrille No. 6 flew from Reims (its station) to Maubeuge, the first stage of a circuit of the north-east of France. The pilots are Lieut. Zapelli, Sergt. Mathieu, Sergt. Hostin, Corporal Golfier, and Corporal Cartault, who are carrying their mechanics, and three motor-tractors are following them by road.

On June 24th Lieut. Dutertre was flying a seaplane at San

Raphaël when the machine dived into the sea. The machine was smashed, but the pilot escaped unhurt.

On June 26th Lieut. Jean de Laborde, stationed at San Raphaël, flew from Buc to San Raphaël on a 60-h.p. Blériot, making stops at Nevers and at Lyon, the total distance being 850 kms.

The French airship "Adjudant Vincenot" beat the world's record for a duration flight last week-end, remaining in the air for 35 hours 20 minutes. Leaving her shed at Toul, the airship flew a circular route and passed over Paris at five p.m. on Saturday. The previous best performance is that of a Zeppelin, which made a circuitous flight from Friedrichshafen to Johannisthal, in 34 hours 50 minutes.

On June 26th three 80-h.p. Blériot monoplanes were tested at Buc before a commission consisting of Commandant Nicoloff, Lieut. Sakelaroff and Lieut. Giovanni Sabelli. The machines are destined for the Bulgarian army. The tests were carried out by MM. Cuendet and Barrault.

GERMANY.

On June 26th Private-aviator Grunow fell from a height of 140 ft. at Metz, receiving injuries from which he died shortly afterwards.

On June 27th Lieut. Pohl, carrying Major Büchner as passenger at the Blitche manoeuvre ground, near Metz, sustained an accident through the explosion of the motor. The pilot escaped with minor injuries, but the passenger was burned.

Lieut. Kolbe, who barely escaped with his life during the Prince Henry Circuit, when his observer, Lieut. Rohde, was killed, was flying at Goerries, near Schwerin, on June 23rd, and after looping on a Fokker machine, took up Capt. Ruff for a passenger-trip across the town. Motor trouble rendered an abrupt descent in a garden necessary, both men and machine being badly damaged. Capt. Ruff broke his thigh and Kolbe suffered concussion of the brain. Haemorrhage set in eventually and he expired two hours later.—B.

On Thursday of last week Lieut. Schröter of the German Navy, while flying in a Wight seaplane recently delivered, was pitched out of his seat, and fell into the water from a height of about 100 feet. He was so seriously injured that he died the same day. The machine, deprived of control, dived into the sea and was seriously damaged. Lieut. Schröter had never before flown anything but an obsolete type of Farman, and had had no experience of handling fast high-powered machines, and consequently was quite unfit to go out alone, with or without a belt.

A day earlier Mr. Gordon England had put this machine through its tests for the German Navy, the speed and climb being practically identical with those of similar machines passed for the British Navy.

RUSSIA.

M. Pequet has lately been in Moscow to test several Morane-Saulnier monoplanes.

On June 24th a Russian military dirigible of the Pigeon type, carrying a crew of ten, flew from Lidi to Vilna, experiencing much difficulty from the weather. Ultimately the balloon showed signs of tearing, and a hurried descent was made onto some trees. The dirigible was totally wrecked, but the crew escaped with sundry injuries.

AUSTRIA.

The Koerting-Wimpassing airship, recently destroyed with the loss of nine lives at Fischamend, was built in 1910. She was 68 metres in length, with a biggest diameter of 10.5. Her capacity was 3,600 cubic metres. Built on the semi-rigid system, she served for school work. This reduces the number of available airships owned by the Austrian War Office to one, the "Parseval," built four years ago, which, however, needs a thorough overhauling. The "Lebaudy," which proved thoroughly unreliable, was cut up, and the "Stagl-Mannsb Barth" was sold by public auction after a chequered career.—B.

ITALY.

An out and home voyage of 600 kilometres was undertaken and carried through neatly by P. 5 on June 25th. The vessel left her shed at Verona, under the command of Capt. Merjari, at 4.30 a.m., arrived at Turin at 8.30 a.m., left there again at

2 p.m., and got home at 7.30 p.m., thus doing some 400 miles in 9 hours. In addition to the crew of five, a brother of the O.C. was on board, himself an officer in the Engineers.—T. S. H.

TURKEY.

After exhaustive tests, extending over six weeks, of various types of seaplanes, the Turkish Government has placed an order for 30 Nieuport hydro-aeroplanes for the Ottoman navy. British constructors, apparently, still neglect opportunities of obtaining business abroad.

GREECE.

The first Sopwith seaplane (100-h.p. Anzani) for the Greek navy was delivered at Athens at the end of May, and was erected in two days by the four English warrant officer mechanics, Messrs. Lapray, Gaskell, Simms and Radley, under the supervision of Lieut. Collyns P. Pizey, R.N.R., all of whom form part of the British Naval Mission to Greece under Rear-Admiral Mark Kerr, R.N.

The flying school arrangements are at present of a very temporary nature, although plans for a permanent station were prepared last September. There are three large Bristol canvas sheds—one used as a dormitory for sailors. The officers are quartered in bell tents captured from the Turkish army during the recent war. The kitchen is built out of empty packing-cases, and a warrant officers' mess-room has been built by wire-bracing four upright posts and covering them with canvas.

Lieut. Pizey has four Greek officers, Lieuts. Moraitinis, Panistou, Papagiogiv, and W.O. Meletopoulos, under training, and all four are ready to start flying alone.

During the first three weeks' work Lieut. Pizey flew altogether some 30 hours. The air station is on the north side of the Bay of Eleusis, practically enclosed by mountains. The climate being hot, the remous are sometimes extraordinary, and one gathers that the air is not by any means ideal for teaching purposes.

BELGIUM.

On June 27th Lieut. Liedel fell from 500 metres, breaking his arms and legs. His condition is critical.

SWITZERLAND.

The Federal Council has decided on the recommendation of the Military Aviation Commission to buy six German Schneider biplanes.

ARGENTINA.

Last week Lieut. Brihnega flew from Buenos Ayres to Cordoba on an 80-h.p. Blériot, a distance of 700 kms.

CHILE.

Sig. Molina Lavin has been engaged by the Government of Paraguay to act as director of aeronautics. His Chilian friends have sent him off from San Diego with à banquet.

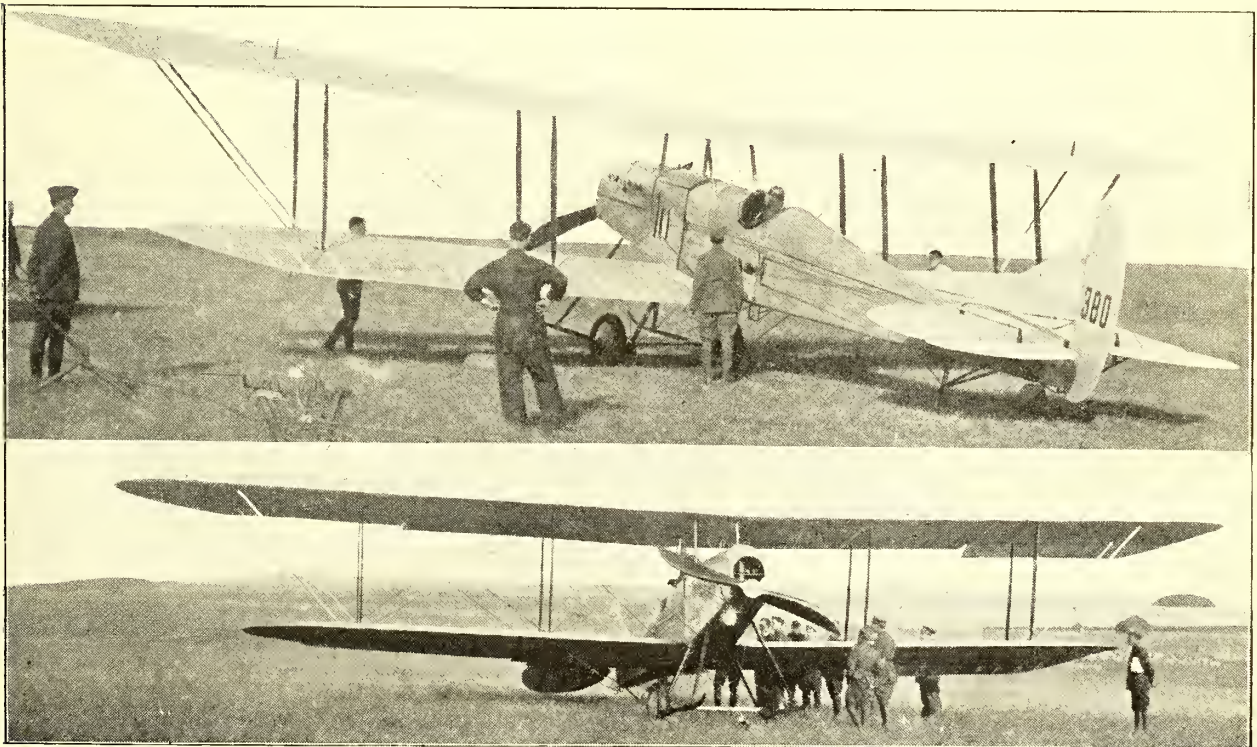
Foreign Notes.

France.

On June 23rd M. Molla, accompanied by M. Girod, deputy for Doubs, flew from Pontarlier to Palente on a R.E.P. monoplane. Later in the day they departed in the direction of Dijon, landing at the military aerodrome at Longwy.

On June 25th M. Alfred Ponnier flew over Reims on his small 50-h.p. Gnome biplane. The machine climbed to 3,100 ft. in 7 mins. with a load of 350 lbs., and showed a range of speed of 110-55 k.p.h. (66 to 33 m.p.h.). Finally he flew to Châteaufort to interview the Russian commission.

The first real attempt on the part of a French manufacturer to imitate our successful fast scout type biplanes has been made by M. Alfred Ponnier at Reims. The machine, which is almost exactly like a Sopwith, has four sets of interplane struts, the inner pair being set into the fuselage, which has the characteristic bull nose of the British machine. The chassis consists of a pair of "V" tubes connected with a cross-axle. The dimensions of the machine are: Length, 5½ m. (17 ft.); span of upper plane, 8 m. (24 ft. 9 in.); lower plane, 7.2 m. (22 ft. 2 in.); total height, 2.55 m. (7 ft. 9 in.); weight, empty, 260 kgs. (572 lbs.); total surface, 20 sq. m. (200 sq. ft.); top speed, 105-110 k.p.h. (65½-68½ m.p.h.); low speed, 50-55 k.p.h. (31¼-34½ m.p.h.); climbing speed, 1,000 m. (3,280 ft.) in 8 mins. with useful load of 160 kgs. (352 lbs.). The motor fitted at present is a 50-h.p. Gnome. The planes have a chord of 1.35 m. (4.16



The "Altitude Machine."—R.E.5, with 120-h.p. Beardmore-Austro-Daimler engine, on which Major Becke, of No. 6 Squadron R.E., has made several attempts to beat Mr. Spratt's height record of 18,900 feet.

ft.) and are staggered. The tail of the machine is flat and flies at a negative angle, and lateral control is by warping. The preliminary tests were made by M. Rost. The firm are to be congratulated on their frankness in accepting a British machine as a model.

On 17th June M. Favre flew from Vidamée to Amiens on his Tubavion monoplane (60-h.p. Clerget motor) in an hour and five minutes.

Germany.

The National Aviation Fund announces that a sum of 50,000 marks will be divided amongst aviators establishing recognised world's records for altitude and duration. Should the record be one already held in Germany, the award will be 5,000 marks; but if held by a foreigner on a foreign machine, the sum will be raised to 10,000 marks.

Heller took Prince Frederick of Bentheim up for a flight at Hangelaar on June 22nd. Unfortunately, the machine fell from a height of 30 metres. The pilot was only slightly hurt, but the Prince broke both legs.

Basser, on his third attempt, broke the world's duration record, held by Poulet (60-h.p. Caudron-Le Rhone biplane), on June 24th.

On a Rumpler biplane, he ascended at Johannisthal at 3.50 p.m. on the 23rd and landed at 10 a.m. on the 24th, having flown 18 hrs. 10 mins. This is the first biplane built by the Rumpler Works, and is fitted with a 100-h.p. Mercedes motor.

Whilst Basser was aloft, Landmann, on an Albatros military biplane with a 75-h.p. Mercedes motor, started a similar attempt. After having flown for some 14 hours, a violent storm arose, but Landmann started off with the wind and flew to Liegnitz, where he landed after 17 hrs. 31 mins. in the air.

Thirty-seven entries were received for the Eastern Province Circuit, starting on June 20th, the event being the first in which non-commissioned officers participated, and in which the industry, as such, refrained from entering and left private owners or pilots to nominate their machines. The day before the start the participants commenced arriving by air, Schüler setting up a new cross-country record with two passengers en route. From Leipzig he flew to Breslau, 330 kms., in 2 hrs. 28 mins. Of the N.C.O.s entered, Seel and Sielaff withdrew owing to accidents during training; all the officers were at the start, but a number of the civilians did not appear.

On June 21st 28 men set off on their first stage to Posen, Lieut. von Hiddessen starting hors concours on an L.V.G. biplane, and Schüler under protest, not having fulfilled the taking-off conditions in time. By 11 a.m. 25 competitors had arrived at Posen, Langer (Albatros biplane) heading the list and Schüler closing it. Sergt. Markgraff (Albatros biplane) effected a bad landing near Liegnitz and retired. Eckhardt (Gotha biplane) had motor trouble continuously, but hoped to arrive at Posen within the time limit. Scherff (Krieger mono) was a late-comer and withdrew before the second stage commenced on June 22nd, which led from Posen to Koenigsberg via Graudenz, 550 kilometres. As his Prince Siegismund mono was not in form, Stiefvater did not appear, and Lieut. von Karstedt (Albatros biplane) remained behind for repairs.

The first to land in Koenigsberg at 9.50 a.m. was Hans (L.V.G. biplane), followed by Schüler and Lieut. von Hiddessen, both hors concours. Luther (Gotha mono) was forced to land near Deutsch-Eylau, smashed up his machine, and as Eckhardt, his mate, did not complete the first stage within the time limit, both Gothas disappeared from the scene. The last man of the 22 to arrive at Koenigsberg on Monday was Lieut. Schaefer, who got in at 8.32 p.m., all the others landing by mid-day. June 23rd and 24th were rest-days, with local competitions and looping by Folkker and Sablatnig. On June 23rd Lieut. Suren finished the second stage. The final stretch led on June 25th from Koenigsberg to Dantzig, where scouting manoeuvres wound up the competition. The result will appear later.

On June 17th the statue to the memory of Professor Otto Lilienthal, the pioneer of aviation, was inaugurated at the Teltow Canal, near Lichterfelde, where Lilienthal first endeavoured to carry out his life's desire. The statue represents the bronze figure of a youth poised to fly, with broad wings

unfolded, gazing upwards. It is due to the Imperial Aviation Society that a public subscription was raised to perpetuate the memory of the dead man, whose widow, son, and brother and co-worker, Herr Gustav Lilienthal, were present at the ceremony, which was attended by representatives of the War Office, Flying Corps, Imperial Aero Club, Government departments, all the associations and bodies interested in aviation, Major von Parseval, the working executive, etc. Two biplanes flew over the spot during the speeches, Höhdorf, who piloted one of them, throwing down a wreath.—B.

On Sunday evening Herr Landmann completed a further and successful attempt to raise the duration record. Starting at 8.30 p.m. on Saturday on an Albatros biplane he flew for 21 hours 50 minutes, covering a total distance of over 1,200 miles.

A retrospect of previous world's duration records is interesting:—

	h. m. s.
Santos-Dumont (Bagatelle, Nov. 12th, 1906)	21 1
H. Farman (Issy, Oct. 26th, 1907)	52 3
H. Farman (Issy, Jan. 13th, 1908)	1 28
H. Farman (Issy, March 21st, 1908)	3 39
L. Delagrangé (Issy, April 11th, 1908)	6 30
L. Delagrangé (Rome, May 30th, 1908)	15 26 4
H. Farman (Issy, July 6th, 1908)	20 19 3
L. Delagrangé (Issy, Sept. 6th, 1908)	29 53 3
W. Wright (Auvours, Sept. 21st, 1908)	1 31 25 4
W. Wright (Auvours, Dec. 18th, 1908)	1 54 53 2
W. Wright (Auvours, Dec. 31st, 1908)	2 20 23 1
Paulhan (Bétheny, Aug. 25th, 1909)	2 43 24
H. Farman (Bétheny, Aug. 27th, 1909)	3 04 56 2
H. Farman (Mourmelon, Nov. 3rd, 1909)	4 17 53 2
Labouchère (Reims, July 9th, 1910)	4 19
Olieslaegers (Reims, July 10th, 1910)	5 03 05 1
Tabuteau (Etampes, Oct. 28th, 1910)	6
H. Farman (Etampes, Dec. 18th, 1910)	8 12 23 2
Fourny (Buc, Sept. 1st, 1911)	11 01 20
Fourny (Buc, Sept., 1912)	13 17 57
Langer (Johannisthal, Feb. 4th, 1914)	14 07
Poulet (Etampes, April 24th, 1914)	16 28 56 4
Basser (Johannisthal, June 24th, 1914)	18 10
Landmann (Johannisthal, June 28th, 1914)	21 50

Austria.

On the Vienna-Aspern ground last week Konschel wagered 500 kroners he would shave himself unassisted whilst flying. Ascending without a passenger, he lathered and shaved in mid-air, controlling with his feet meanwhile. After 20 mins. he landed, having had as close a shave as anyone in the air.

On the opening-day of the Vienna-Aspern week (June 21st) all the events were extremely well contested. Unfortunately, Mr. Sippe (Bristol) was put out of the running for the time being by colliding with a pylon, the frame of the machine being bent by the impact. The altitude event was won by Lieut. Bier (Lloyd biplane), the well-known Austrian, carrying a passenger, who reached 4,120 metres (13,400 ft.). Audemars and Bielovucic, without passengers, rose to 4,330 and 4,170 metres. The duration daily prize of 1,000 francs was won by Ingold (Aviatik biplane), with 4 hrs. 7 mins. 2 secs. Stiploschek (Jeannin-Dove) being second. Garros was fastest in the heats of the speed trials over 8,600 metres, Gilbert, Audemars, Hirth, Prévost and Bielovucic being eligible to start in the semi-finals. The next flying-day was postponed to June 25th, owing to the funeral ceremonies of the victims of the Koerting airship disaster.—B.

Italy.

The peculiar phase of suspended development in which aviation here is now standing is typified by the decision just taken to postpone the Geneva-Tripoli "raid" till next year. The contest was warmly supported by the naval and military authorities, which might not be the case another year. However, as a smaller attraction to the Genoese Exhibition, Manisero opened—or perhaps one ought to write "officially inaugurated"—the new aerodrome at Lido d'Albaro outside that city last week.

The looping engagements which De Dominicis has contracted in several towns are being carried through successfully.

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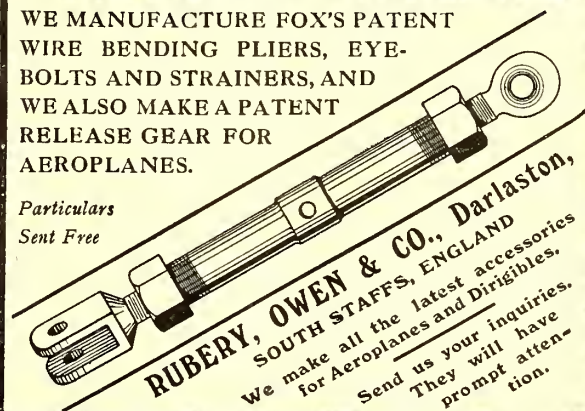
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

The Caudron visited and gave Venice its first sight of up-to-date aerial tricks last week.

A priority of invention case in which an Italian investigator and inventor claims to have arrived at the same conclusions as the Frenchman, M. Gouin, some years before him, is interesting people. The principal characteristics common to both theories are found in this country in the Quadrini mono, of which more next week; but I believe the Gouin data were applied to Blériots.—T. S. HARVEY.

Belgium.

Between September 19th and 26th there will be held "The Circuit of Three Rivers," a contest for waterplanes over the Scheldt, the Rhine, and the Meuse. The competition is international and will be flown in the following stages:—

- (1) Sept. 19th—Brussels-Nimègue, 281 kms.
 - (2) Sept. 20th—Nimègue-Dusseldorf, 132 kms.
 - (3) Sept. 21st—Dusseldorf-Duisbourg (3½ times 50 kms.), 175 kms.
 - (4) Sept. 22nd-23rd—Duisbourg-Liège via Nimègue, 348 kms.
 - (5) Sept. 24th—Liège-Yvoir and back to Namur, 116 kms.
 - (6) Sept. 25th—Namur-Rotterdam, 294 kms.
 - (7) Sept. 26th—Rotterdam-Brussels, 172 kms.
- Total—1,518 kms.

The third stage has to be covered three and a half times.

Holland.

On June 28th Jean Olieslagers gave a demonstration of loop-ing at Schootenhoep in aid of the Anti-Tuberculosis League.

Australia.

Mr. Stone's proposed mail flight from Melbourne to Sydney, referred to last week, was postponed and the flight was to have commenced on May 30th last.

U.S.A.

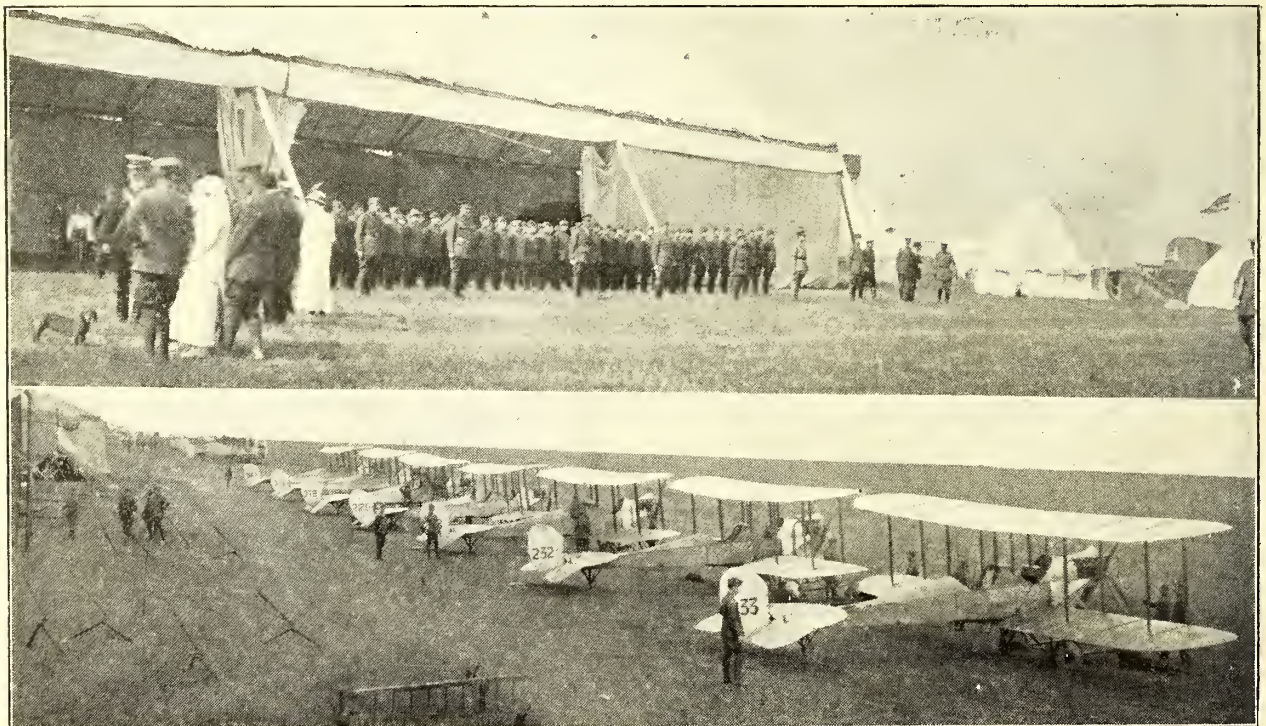
Trials of the Curtiss-Wanamaker transatlantic machine were made on Lake Keuka on Wednesday, Thursday and Friday last week, and the machine is said to have flown successfully

with three passengers and 1,300 lbs. of ballast, and also with seven passengers on board. It is, however, said that with full load on board the machine refused to leave the water, and that certain alterations in the floats were therefore made. On Saturday the machine rose well with seven people on board, the total weight, including passengers, being about 2 tons. The speed is computed at only 65 miles an hour.

The Seaplane Circuit of Britain.

The following is the complete list of entries for the Seaplane Circuit of Britain, for the "Daily Mail" £5,000 Prize, which starts on August 12th from Southampton Water.

1. British Curtiss biplane flying-boat. Two 100-h.p. Curtiss-Austin engines. Pilot, Mr. A. Loftus Bryan. Entrants, White and Thompson, Ltd., Bognor.
2. British Curtiss biplane flying-boat. 120 Beardmore Austro-Daimler engine. Pilot, Capt. E. C. Bass. Entrants, White and Thompson, Ltd., Bognor.
3. Sopwith tractor biplane. 150-h.p. Sunbeam engine. Pilot, Mr. Howard Pixton. Entrants, the Sopwith Aviation Co., Ltd., Kingston.
4. Sopwith tractor biplane, 100-h.p. British monosoupape Gnome engine. Pilot, Mr. H. G. Hawker. Entrants, the Sopwith Aviation Co., Ltd.
5. Grahame-White propeller biplane, 100-h.p. British monosoupape Gnome engine. Pilot (to be announced later). Entrants, The Grahame-White Aviation Co., Ltd, Hendon, W.
6. Avro tractor biplane, 150-h.p. Sunbeam engine. Pilot, Mr. F. P. Raynham. Entrants, A. V. Roe and Co., Ltd., Manchester.
7. E.A.C. tractor biplane, 120-h.p. Green engine. Pilot, Mr. F. B. Fowler. Entrants, The Eastbourne Aviation Co., Ltd., Eastbourne.
8. Blackburn hydro-biplane, 130-h.p. Salmson engine. Pilot, Mr. Sydney Pickles. Entrants, The Blackburn Aeroplane Co., Ltd., Leeds.
9. Beardmore tractor biplane (D.F.W. type), 120-h.p. Beardmore-Austro-Daimler engine. Pilot (to be announced later). Entrants, Wm. Beardmore and Co., Ltd., Glasgow.



The "War Lord's" Review.—Above, Mr. Asquith on right is seen about to inspect No. 2 Squadron, R.F.C. Below are the B.E.s ready to start their demonstration flights. The Camp Commandant's streamline dog is prominent in the upper picture.

Mr. Hawker's Smash.

One of the most extraordinary accidents in the history of aviation, and a still more extraordinary escape from death, occurred to Mr. Harry Hawker at Brooklands on Saturday evening last. Mr. Hawker went up about 7 p.m. on the Sopwith Scout (100-h.p. monosoupape Gnome) and at about 1,200 feet he made one of his famous loops with the engine cut off, by diving steeply and then pulling back. He made the loop perfectly, out over the Byfleet Road, and as he came out of it he started a vertical dive with a spin in it.

When I first caught sight of him from the Paddock, he was doing a perfect "tourbillon" spin, à la Chanteloup—that is to say the wings were revolving round the centre-line of the fuselage, and the machine was standing vertically on its nose. It was coming down quite slowly for such a fast machine, the pace being nothing like its ordinary vertical diving speed. Then the tail seemed to swing out and the vertical path became an irregular spiral to the right, till finally the machine seemed to be doing a banked turn with the body nearly horizontal and the left wing up. The dropping speed had by then decreased noticeably, but it was obvious that the machine was not under proper control, for it seemed to "slash" or "flutter" round like a falling leaf. At this point it disappeared behind the trees on St. George's Hill.

As quickly as possible a number of the people from Brooklands got to the spot, and after considerable difficulty found the machine on the ground in a thick coppice, with Mr. Hawker standing alongside it absolutely unhurt. A few minutes afterwards he went off back to Brooklands sitting on the carrier of a motor bicycle, leaving the machine in charge of the Sopwith machine crew.

Apparently the machine had struck partly sideways and partly nose on into the top of a tall tree, into which it had flown rather than fallen. It had then fallen vertically, bringing several big boughs of the tree with it, and had finally sat down right side up, flat on its chassis on top of sundry saplings and undergrowth. The wings had folded up neatly as it fell through the trees, and had come down like a lid on the cockpit—how Mr. Hawker got out is a mystery. The chassis had telescoped into the front of the fuselage. The cowl was dented and bent, but not torn off. Two or three valve tappets had been wiped off the engine, which was evidently revolving when it struck the trees. The propeller was broken at the ends, but not at the boss. The fuselage aft of the tank, with the elevator and rudder, were absolutely untouched.

The first thing we did was to test the controls, and then found the elevator and rudder working perfectly. The warp wires were also uninjured, so there can be no question of controls going wrong. What, then, was the cause of the accident?

For some time previously Mr. Hawker had been proving the extraordinary stability of this machine. He used to take her up to 1,000 feet or so, switch off his engine, and let the machine glide. Then he would pull his elevator slowly to stall her. With the elevator hard back she would neither tail-slide nor dive, nor side-slip. She would simply descend on an even keel like a parachute, but moving gently forward and

rolling slowly first onto one wing and then back to the other. Occasionally, in a gust, she would slide to one side, descending sideways at about 45 degrees, which is hardly a side-slip. On pushing the lever forward she would pick up her gliding angle promptly. In fact, she seemed absolutely stable in every direction. She recovered promptly also from a straight dive which was almost vertical.

Now comes this smash, and it is worth studying, for according to the rules of the game the machine should have come up when the elevator was pulled back. During the afternoon Mr. Hawker had been arguing with an officer of the Naval Air Service about the need for more vertical surface aft on these small high-speed scouts. The officer in question held that, owing to the short tail, if a "scout" started to spin round its own nose it would never come into control again.

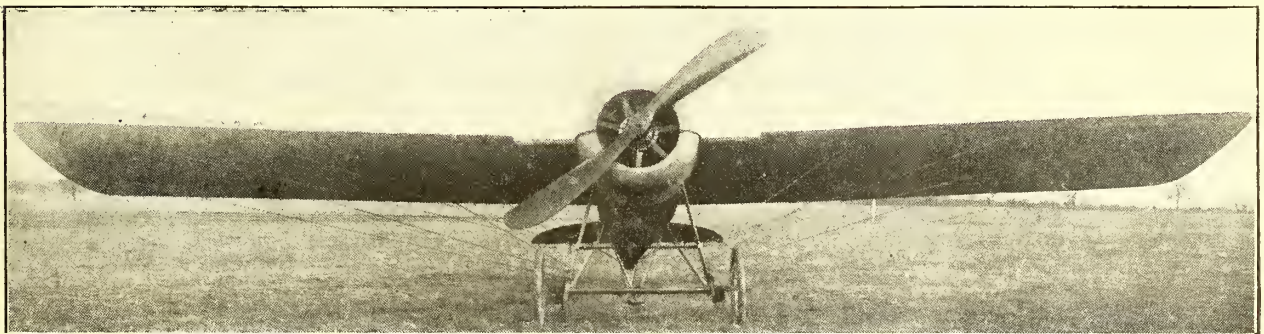
When Mr. Hawker disappeared behind the trees he undoubtedly had his elevator lever hard back, and, as he was then banked well over to the right, his elevators were acting, if they were acting at all, as rudders, and so were forcing his tail round and increasing the spin. In this position the rudder should act as an elevator and throw the nose of the machine down, so causing a straight nose-dive from which it should be easy to recover. Mr. Hawker tells me that he tried to do this but could not get it round against the air pressure, and he ascribes this to the rudder being of the unbalanced type. He thinks that with a balanced rudder and no fin he could have done it.

Also, he admits that if he had pushed the elevator forward as soon as he found the spin developing, and had made a straight dive, he could have pulled up straight, but he thought he was too near the ground to risk doing so.

It must be remembered that the Caudron on which Chanteloup does his "tourbillon" dive has a tail that warps in unison with the wings and that it has two big balanced rudders, so that it really has more control than the "scout" class, and as it is a much slower machine it changes its attitude in a much shorter distance even if it takes the same length of time to do so. Still, it looked to me as if Mr. Hawker was getting the machine under control just as she disappeared, and I believe that if he tries the experiment again at 3,000 feet (no one should try experiments lower than that) instead of about 1,000 he will have come into control at 1,000 or so.

Anyhow, he is very lucky to be alive, and only for that opportune clump of trees he would not have been. Still, to please the Navy it might be worth while trying one of the scouts with a bigger rudder and fin—and a proportionately strong rudder tube, just to avoid B.E. habits—so as to see how it affects their normal flying. If it does not slow the machine appreciably, it might be well to adopt a larger size simply to give extra directional stability and control, and simplify the flying of the type by less clever pilots.

Has it struck anybody that there may be a very good reason for the old Antoinette system of having vertical fins and rudders exactly equal to the tail fins and elevators? An arrow with its vertical feathers differing in area from its horizontal feathers would probably steer curiously, so why not try a symmetrical "empennage" on aeroplanes?—C. G. G.



The latest armoured Nieuport monoplane. (See p. 18.)

The London-Paris Race.

The entry list has now been opened for the Hendon-Paris-Hendon Race, which is to take place on Saturday, July 11th, starting from the Hendon Aerodrome in the early morning, and finishing at Hendon about 5 p.m. the same afternoon. It is expected that at least twenty famous British and Continental racing pilots will take part in the contest, and thirteen entries have already been received as follows:—

PILOT	MACHINE	TYPE
W. L. Brock	(U.S.A.) 80 h.p. Morane ..	Mono.
R. R. Skene	(B) 120 h.p. Martinsyde ..	Mono.
Lord Carbery	(B) 80 h.p. Bristol ..	Bi.
L. Noel	(F) 80 h.p. Morane ..	Mono.
E. Renaux	(F) 120 h.p. M. Farman ..	Bi.
Hawker or Another ..	(A) 100 h.p. Sopwith ..	Bi.
G. Strange or Another	(B) 80 h.p. Bleriot ..	Mono.
M. Malard	(F) Nieuport ..	Mono.
R. Carr	(B) 80 h.p. Morane ..	Mono.
M. Lenoir	(F) 80 h.p. Ponnier ..	Mono.
T. E. Hearn	(B) 80 h.p. Bleriot ..	Mono.
M. A. Parmelin	(Sw.) Deperdussin ..	Mono.
P. Verrier	(F) 80 h.p. H Farman ..	Bi.

The Armoured Nieuport.

The latest Nieuport—shown in the photograph on page 17—is a single-seater armoured scout. On standard Nieuport lines, fitted with an 80 Gnome, this machine with pilot and two hours' petrol and oil, flies at 68 m.p.h. and climbs to 1000 metres (3,280 ft.) in 5 minutes (656 ft. per minute), takes 262 feet to leave the ground and alights and stops in 197 feet. Nickel steel plate of 3 mm. and 2 mm. thickness protects the motor, tanks and the pilot from rifle fire.

The Nieuport Co. expect to be represented in the London-Paris-London race on Saturday week, July 11th, by M. Malard, who is known as one of the most expert of French pilots, and has done some remarkable performances. This entry is particularly interesting, apart from the fact that it is so long since a Nieuport appeared in competition in this country.

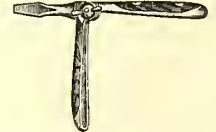
A Useful Tool.

From Mr. Geo. Adams, of 255-6, High Holborn, there has been received a sample of the "Triple Lever Screw-driver" illustrated below.

As the illustrations show, this instrument has two handles secured to the shaft of the screw-driver proper, through a hinge joint and a butterfly nut. With both handles in line



an ordinary straight forward screw-driver is formed—by turning one handle at right angles pressure may be applied with the one hand and a great turning effort with the other. With the handles forming a T-head a still greater twisting effort may be obtained. Both handles may be turned at an angle to get



into awkward corners. The screw-driver is some 9 inches long over all, has a blade of $\frac{5}{8}$ -in. wide and is strongly and substantially made, and seems likely to persuade the most stubborn of screws into turning. The price is quite moderate, and the tool's value to all having to do with machinery should be obvious.

The internal faces of the handles at the joint are recessed, and there are corresponding studs on the butt of the blade, so that the joint cannot slip when screwed up.

Mr. Geo. Adams holds a large stock of useful tools of every description, and has the reputation of invariably giving prompt delivery. His catalogue should be in the hands of all those who use tools of any description.



The "War Lord's" Review.—Above Mr. Asquith is seen on the left. Next to him Colonel Sykes is talking to Miss Asquith in the rainbow skirt. On the right General Sir David Henderson is talking to Lieut. Barrington-Kennett (Adjutant, R.F.C.). Below, Mr. Asquith with Colonel Sykes, and Miss Asquith with General Henderson are seen leaving No. 3 Squadron's sheds. Mr. Asquith's hand in the upper picture suggests a super-lunch in the Mess.

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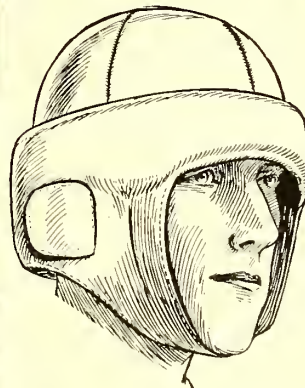
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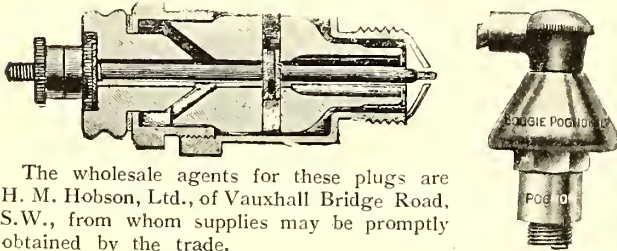
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A Sound Job.

The Pogon plug is sufficiently well-known to those who have to do with petrol motors to need no general introduction, but it may be as well to draw further attention to their merits—as these plugs are now being made suitable for aero engines of both the stationary and the rotary types. Owing to the special arrangement of the electrodes in Pogon plugs it is claimed that all risk of pre-ignition by incandescence, or misfire through rapid wear of the points is eliminated.

The accompanying sectional view indicates the sub-divided porcelain system, which allows for expansion and contraction without risk of cracking. It also shows the special form of the lower porcelain—which is in the form of a thin tube, giving a very long insulating surface, is kept at a sufficiently high temperature to burn off oil, and so prevent soot depositing thereon.



The wholesale agents for these plugs are H. M. Hobson, Ltd., of Vauxhall Bridge Road, S.W., from whom supplies may be promptly obtained by the trade.

A fitting of distinct interest is the water-tight protection cover for plugs, combined with a terminal, which completely prevents water from reaching the plug. This fits any plug provided with a split terminal, and is of obvious value for seaplane motors.

A New Company.

The Shoreham Flying School, Ltd.—This company has been registered with a capital of £1,000, in £1 shares. Objects: To acquire the business of a flying school and motor agents, etc., now carried on by W. H. Elliott, G. J. Lusted, and B. H. England, at the Shoreham Aerodrome, Shoreham, under the style of "The Shoreham Flying School," and to arrange and carry out public expositions of aviation, to carry and transport persons and goods through the air, to arrange and conduct an aerial passenger and goods delivery service, and to carry on the business of general carriers, etc.; also to enter into an agreement with W. H. Elliott, G. J. Lusted, and B. H. England. First directors: W. H. Elliott (managing director), 12, Carfax, Horsham, Sussex; B. H. England, Hall Land, Slinfold; G. J. Lusted; and H. H. R. Aikmann. Qualification, £25. Private company.

Photographs of Aviators.

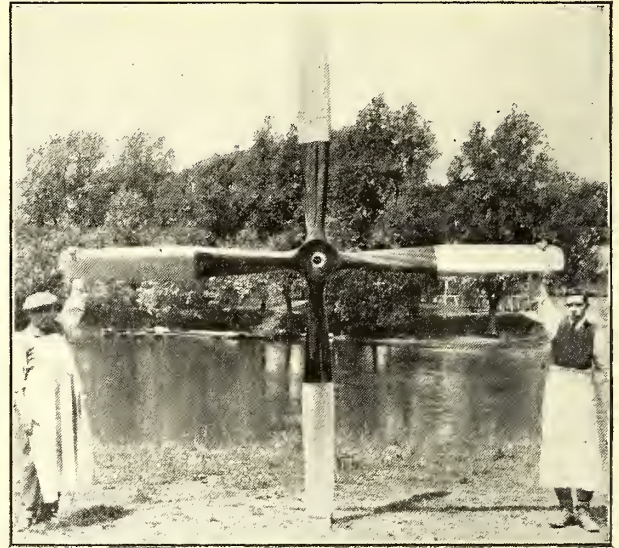
The portrait of Mr. Walter L. Brock, which appeared as the frontispiece of this paper last week, was taken by Mr. F. N. Birkett, Percy Road, Shepherd's Bush, W. Mr. Birkett specialises on aeronautic and motoring photographs, and has the finest collection of portraits of aviators one has yet seen. He can supply portraits of almost any aviator at quite reasonable prices.

Mr. Dyott's Return.

Mr. F. M. Dyott has returned from France bearing the marks of a recent bad smash sustained when testing an experimental Nieuport at Villacoublay. The machine was apparently overloaded and under-controlled and refused to recover from a nose-dive. Mr. Dyott was badly cut about the head and legs, but has now completely recovered.

A Correction.

In the account of the London-Manchester race in our last week's issue, Mr. Strange was credited with being the second pilot to fly from London to Manchester in one day. This is obviously not the case, as it was recorded in the same issue that M. Verrier flew from Hendon to Trafford Park on the previous day, Friday, May 10th. Mr. Strange must be content with third place. Anyhow, he was the first to do the journey on a monoplane.



The 12-ft. propeller, built by Lang Propellers, Ltd., for the Trans-Atlantic Martinsyde.—In the vernacular of the aerodrome, "Some wind-stick!"

Amusements.

The White City at Shepherd's Bush, which has now become more or less a Pink City, is now in full swing. This year it is occupied by the Anglo-American Exhibition, though as a matter of fact the actual subject of the exhibition matters little at a show of this sort.

From the aviation point of view the chief interest lies in the Land and Aerial Travel Building, where the Aerial League have collected quite a nice show of things connected with aeronautics. This section is a credit to its organiser, Colonel H. S. Massy, C.B.; in fact, much information concerning the very early days of aviation, such as may be gleaned from old prints and manuscripts, may be seen here and nowhere else.

The display of modern photographs of existing machines and aviators is the finest yet seen. A number of these photographs have been lent by THE AEROPLANE. There is also a particularly fine exhibit by Mr. Birkett, who has already attained the position of the leading aeronautical photographer. His exhibit includes excellent portraits of most of the leading pilots and pictures of the chief events in the history of aviation during the past year or two. It is to be hoped that when the exhibition closes this collection of photographs will not be dispersed, for it deserves to be acquired undivided by someone interested in some place where those interested in aeronautics foregather, as, for example, one of the big aerodromes, or one of the leading hotels on Salisbury Plain or at Farnborough.

Apart from the aviation exhibit the exhibition contains many things of interest as well as the usual amusements. The "flip-flap" is in full working order. One finds that quite a number of people who are at home in an aeroplane at any height say that this weird instrument gives them quite a thrill.

During such hot weather as may be vouchsafed to us this Summer there are few pleasanter places at which to cool off during the evening than the Earl's Court Exhibition. There is nothing there of specifically aeronautical interest, but the place seems as popular as ever as an out-door resort among those concerned with aviation.

Visitors should on no account miss seeing the show of Spanish music and dancing in the Empress Hall. This is quite one of the most interesting and most amusing performances at present on in town. One hopes the management will improve the acoustic properties of the theatre in some way before long and will also arrange the seats so that it is possible to see the stage better than at present.

Many of our aviators seem to find the usual amount of amusement in the various mountain railways and the Maxim flying boats.

The Week's Work.

Weather Report for Week Ending June 28th.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Brooklands ...	Windy	Fair	Good	Imposs.	Fair	Fair	Fine
Calshot ...	Show'y	Show'y	Fine	Fine	Fine	Fine	Fine
Eastbourne ...	Wind	Misty	Fair	Fair	Wind	Fair	Wind
Eastchurch ...	Fine	Fine	Fine	Fine	Fine	Fine	Fine
Hendon ...	Fair	Gale	Wind	Wind	Fair	Windy	Fine

Flying at Hendon.

Although the weather was fine on Thursday things were rather quiet, all the flying being done by Mr. Louis Noël on the Maurice Farman and by Messrs. Barrs and Lillywhite on Grahame-White biplanes.

The flying on Saturday was of a high order both in quality and quantity. Messrs. Howarth and Lillywhite flew on box-kites, Messrs. Noel, Barrs and Lillywhite the 80-h.p. Grahame-White Blériot, Messrs. Noël and Birchenough the Maurice Farman, M. Noël the 80-h.p. Morane, Mr. Björklund the R. and M. monoplane, M. Verrier the Aircraft Co.'s Maurice Farman, Mr. Hall the 50-h.p. Avro, and Messrs. Beaumann and Watts the Beatty-Wright machines.

The speed handicap was the principal feature of the afternoon and provided some very fine flying.

In the first heat were Messrs. Howarth (box-kite), Birchenough (Maurice Farman), Barrs (Blériot and passenger) and Noël on the 80-h.p. G.-W. Morane. Mr. Noël, who seemed determined to turn his bad luck in good time for the London-Paris-London race, put up a startling performance. He flew high above the pylons, but did not waste an inch, finally finishing a good half lap ahead of his opponents, who came home in a bunch, Mr. Birchenough being second. Mr. Barrs flew exceedingly well on the Blériot, but was obviously slightly over-handicapped.

In the second heat were Messrs. Baumann (50-h.p. Wright), Lillywhite (50-h.p. G.-W. biplane), Hall (50-h.p. Avro), and Verrier (Maurice Farman). Mr. Hall flew well and carefully and thoroughly deserved to win his heat, and M. Verrier was not far behind.

The final, however, was one of the most astonishing performances of the season. Messrs. Birchenough, Verrier, Hall, and Noël started in turn. The first three flew well, but Mr. Noël, who was obviously very excited before starting, did wonders. By the time half the race was through he had overtaken and passed all the other machines and finally finished up a lap ahead. His best lap was 1 min. 7 3/5 secs., which represents a speed round the pylons of 73.4 m.p.h.—a record for Hendon. The previous best time was 70 m.p.h. achieved by Mr. Raynham on an 80-h.p. Avro biplane. M. Verrier finished second.

Mr. Björklund flew all the afternoon on his antiquated R. and M. monoplane, and considering the condition of the machine really did wonders; the way the wing section varies along every six inches of the spars inspires one with doubt as to whether a camber or an angle of incidence is necessary at all.

Visitors to the paddock enclosure wondered at seeing that the enormous hangar in course of construction next the Willows shed had collapsed. Although work was proceeding at the time, fortunately no one was killed, but less serious injuries were sustained by two men.

A great deal of passenger carrying took place on Sunday. Mr. Lillywhite flew the 80-h.p. Blériot, Mr. Birchenough the G.-W. Maurice Farman, Mr. Noël the Morane-Saulnier, Mr. Howarth the G.-W. biplane, M. Verrier a Maurice Farman, Mr. Björklund his R. and M. monoplane, and Mr. J. L. Hall his 50-h.p. Avro.

Flying at Brooklands.

On Monday, June 22nd, Mr. F. Goodden with a mechanic as passenger was starting for Luton on the 80-h.p. Morane when a wheel buckled, turning the machine over on its nose, breaking the propeller and bending the shaft.

On Tuesday Mr. Harry Hawker flew an 80-h.p. Sopwith Scout to Farnborough. Mr. Goodden tested the 80-h.p. Morane

and later flew to Luton with a mechanic. Mr. Gower was out on the 50-h.p. Blériot. In the afternoon Mr. Jack Alcock flew to Hendon with a passenger on the Sunbeam-Farman. Mr. Hawker flew the 80-h.p. Sopwith, and afterwards with a passenger.

On Wednesday afternoon Messrs. Mahl and Gower were flying round the neighbouring country on the 80 Sopwith and 50 Blériot, respectively. Mr. Hawker did seven loops on the 100-h.p. Sopwith. Messrs. Mahl and MacGordon were doing straights on the 80-h.p. Sopwith. Mr. Jack Alcock was taking passengers on the Sunbeam-Farman. Lieut. F. H. Eberli, Vickers pupil, took his brevet, height 600 ft. Lieuts. L. F. Richards and C. Nugent, Bristol pupils, took their brevets, height 550 and 800, respectively. Capt. Walcot, Bristol pupil, did his third test, height 350 ft.

On Thursday afternoon Mr. Gower flew the 50-h.p. Blériot. Mr. Hawker did several loops, etc., on the 100-h.p. Sopwith.

On Friday Mr. J. Gordon Miller (Vickers) took his brevet, doing an excellent glide from 2,500 ft. In the afternoon Mr. Gower was out on the 50-h.p. Blériot, the de Bolotoff triplane was "taxying," but showed no signs of lifting. Mr. Gley was out on the Perry-Beadle machine (45 Anzani), but landed heavily, buckling a wheel and turning the machine over on its back. Mr. Hawker was looping on the 100-h.p. Sopwith. Mr. Mahl flew the 80-h.p. Sopwith, and Mr. MacGordon was doing circuits on the 80-h.p.

On Saturday there was little or no flying till just before the race. This was won by Mr. Mahl on the 80-Sopwith, Mr. Alcock on the Sunbeam-Farman, 2nd; Mr. Barnwell on the Vickers gun-carrier (100 monosoupape Gnome) 3rd, all close together. The "also rans" were Mr. Pixton, 80-h.p. Sopwith Scout, and Mr. Hawker, 100-h.p. Sopwith Scout, who came near the first bunch, but kept their respective distances from one another, Messrs. Gower and Wilberforce (on Blériots, with 50 Gnome and 45 Anzani, respectively), both of whom flew excellently, Messrs. Knight and Elsdon (70 and 50 Vickers box-kite), Messrs. Stutt and Merriam (50 Bristol box-kites), and Webb (50 Vickers box-kite). The last-named retired in the first lap, confessing to what is colloquially known as "cold feet." (The writer saw one bump which justified retirement.) Late in the evening Mr. Hawker landed in a tree on St. George's Hill, as described elsewhere.

On Sunday Mr. Mahl was out alone and with several passengers on the 80-h.p. Sopwith. Mr. Jack Alcock took several passengers, including the Brooklands bailout passenger, on the Sunbeam-Farman. Mr. Pixton gave an excellent show on the 80-Sopwith. Mr. Hawker also flew the 80-h.p. tabloid, showing that he had completely recovered from his very unpleasant accident of the previous evening. Mr. Dukinfield-Jones flew the D.F.W. He was just back from Germany, where he has been flying as a passenger on various types of machines, which will later arrive over here.

Flying at Glasgow.

A highly successful meeting was held at Scotstoun Ground, Glasgow, commencing on June 25. On the first day the tent serving as a hangar fell down owing to the breaking of one of the poles, but it only broke the rudder on the looping machine.

Mr. Hucks first flew the two-seater Blériot, after which he took up a very young member of a local model aeroplane club for a "joy ride" to 4,300 ft. Mr. Hucks then gave a magnificent display and was received with great enthusiasm. After a short interval Mr. Hucks brought out his 50-h.p. Blériot and made a fine upside down flight, followed by a number of loops.

In the evening Mr. Hucks gave a similar demonstration to that of the afternoon.

On Friday the weather was very good for altitude work, and during the afternoon Mr. Hucks broke the Scottish height record, attaining an altitude of 7,200 feet, descending in a very fine spiral. Many passengers were carried during the afternoon.

At mid-day Mr. Manton's machine arrived from Malton and in the evening the pilots gave combined demonstrations of fancy flying, after which both pilots gave separate demonstra-

tions of looping. The last flight was a demonstration of combined looping; Mr. Hucks and Mr. Manton both on 50-h.p. Blériots rose to the same altitude and manoeuvred until they were in line side by side and then looped several times before descending. A spectator remarked that their movements were so precise that they seemed to be connected by means of an invisible bar.

On Saturday, the last day of the meeting, a very similar programme was carried out in both the afternoon and evening demonstrations by both pilots. Some 40,000 people paid for admission. This success is very largely due to the Scottish Aeronautical Society, which seems very much alive.

Flying at Liverpool.

Pupils being away on business, on Friday, 26th, Mr. Melly took out the two-seater Blériot with the 70-h.p. Isaacson engine, and went round Southport, 30 miles in 36 minutes, and reached 4000 ft. in 17 minutes. He did not climb further on the return journey as one of the plugs was missing frequently. The new engine has certainly taught the machine to climb, with the old 50-h.p. Gnome she never reached more than 2,500 ft. and that after flying for half an hour. The streamlining of the bonnet has improved the machine out of sight both as regards speed and flying.

Flying at Bognor.

Mr. Spratt, in a B.E.2, was flying over Bognor on Sunday, June 21st, and paid a visit to Messrs. White and Thompson, Ltd., at Middleton, on Monday to pick up petrol. The wind was blowing at something like 45 m.p.h., but it did not seem to trouble Mr. Spratt in the least.

Capt. Bass's Curtiss boat (Anzani) returned from Brighton on Wednesday, and has been out a lot since, being in the air about three hours on Thursday. It was also out for over two hours on Saturday.

Mr. Whitehouse and Capt. Bass were up for over an hour at one stretch, making a trip of something like 70 to 80 miles. Mr. and Mrs. Compton-Paterson, of South Africa, were witnesses of this latter flight.—A. B.

Flying at Eastbourne.

On Saturday last, Mr. F. B. Fowler, on the Eastbourne Aviation Co.'s waterplane, was out both morning and afternoon from the beach. Mr. Fowler carried ten passengers during the day, flying with them over Eastbourne and Beachy Head.

Flying at Eastchurch.

On Wednesday, Thursday, and Saturday, Mr. Alec Ogilvie flew his Wright biplane (50-h.p. N.E.C.), and on Thursday and Sunday Mr. Leo Jezzi flew his biplane with the 35-h.p. J.A.P. motor.

SCHOOL REPORTS.

Brooklands.—AT VICKERS SCHOOL: Instructors: Messrs. Barnwell, Knight, Elsdon and Webb. Pupils with instr on machine: Capt Kaee (4), Lt Clemson (9), Lt Warrand (4). Strts or rolls alone: Capt Kane (1). 8's or circles alone: Capt Kane (5); Lts Eberli (6), and Warrand (5), Mr. Miller (3). Certificates taken: Lt Eberli and Mr. Gordon Miller. Machines in use: Three school biplanes.

AT BRISTOL SCHOOL: Instructors: Messrs. Jullerot, Merriam and Stutt. Pupils with instr on machine: Mr. Godwin (18), Lt Coles (15), Lt Britten (3), Mr. Treloar (3), Mr. Collins (13), Mr. Charlesworth (1), Lt Nugent (1), Capt Bernard (1). Strts or rolls alone: Mr. Adamson (2), Mr. Charlesworth (2), Mr. Treloar (2), Mr. Rutledge (1). 8's or circles alone: Lt Nugent (6), Mr. Charlesworth (4), Lt Richard (4), Capt Walcott (1), Mr. Adamson (7), Mr. Rutledge (6), Mr. Treloar (5). Certificates taken: Lt Richard and Lt Nugent on June 24th, 1914. Machines in use: Three school biplanes.

AT BLÉRIOT SCHOOL.—Instructor: Mr. M. J. Teulade. Pupils doing strts or rolls alone: Mr. A. Crick (30 mins), Lieut. North (60 mins), Messrs. H. O'Haigh (34 mins), W. South (9 mins), Capt. de Villiers (18 mins). 8's or circles alone: Mr. Willberforce, 10 mins on 45-h.p. Anzani to 1000 ft. Machines in use: 25-h.p., 28-h.p. and 45-h.p. Anzani-Blériots. Mr. E. L. Gower various flights amounting to 2½ hrs. on 50-h.p.

Gnome-Blériot over surrounding country. It is hoped to have two new 35-h.p. Anzani-Blériots for school work next week.

Eastbourne.—AT EASTBOURNE AVIATION CO.'S SCHOOL: Instructors: Messrs. Fowler and Morgan. Pupils with instr on machine: Messrs. Arnold, Hardstaff and Bass Sutton. Circs alone: Mrs. Salmon and Mr. Gwynne. Mr. Gwynne took first half of his ticket in very good style on Wednesday evening. Machines in use: Two E.A.C. biplanes.

Hendon.—AT GRAHAME-WHITE SCHOOL: Instructors: Messrs. Howarth, Barrs and Lillywhite. Pupils with instr on machine: Messrs. Liu, Shepherd, Courtney, Upton, Palmer, Gruning, Wyles. Strts or rolls alone: Messrs. Shepherd and Dunne. 8's or circles alone: Messrs. North, Lowe, Robinson, Boyesen, Dunne. Machines in use: Grahame-White School machines.

AT THE BEATTY SCHOOL OF FLYING.—Instructors: Messrs. Baumann and W. Watts. Pupils with instr on machine: Messrs. MacLachlan (38 mins), Allen (19), Bentley (26), Hodgson (32), Elverson (10), Lieuts. Maguire (50), Browning-Paterson (29). Certificate taken: Lieut. Geoffrey C. L. Dalley. Machines in use: Two Wright biplanes.

AT THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. W. T. Warren and R. Desoutter. Pupil doing strts or rolls alone: Mr. Abbott. 8's or circles alone: Mrs. Buller, Mr. Macgregor. Certificate taken: Mr. Macgregor. Machines in use: Two Caudron biplanes (35-h.p.).

AT HALL FLYING SCHOOL.—Instructors: Messrs. J. L. Hall, J. Clappen, and Virgilio. Pupils with instr on machine: Miss D. Clifford, circs for 45 mins. on dual control Avro. Strts or rolls alone: Messrs. H. Gearing, A. F. Arcier, A. L. Brookes, and Gibson. 8's or circles alone: Mr. A. L. Brookes (3). Machines in use: Avro and Caudron biplanes, Deperdussin mono. Mr. J. L. Hall exhibition flights, passenger carrying and racing on Avro.

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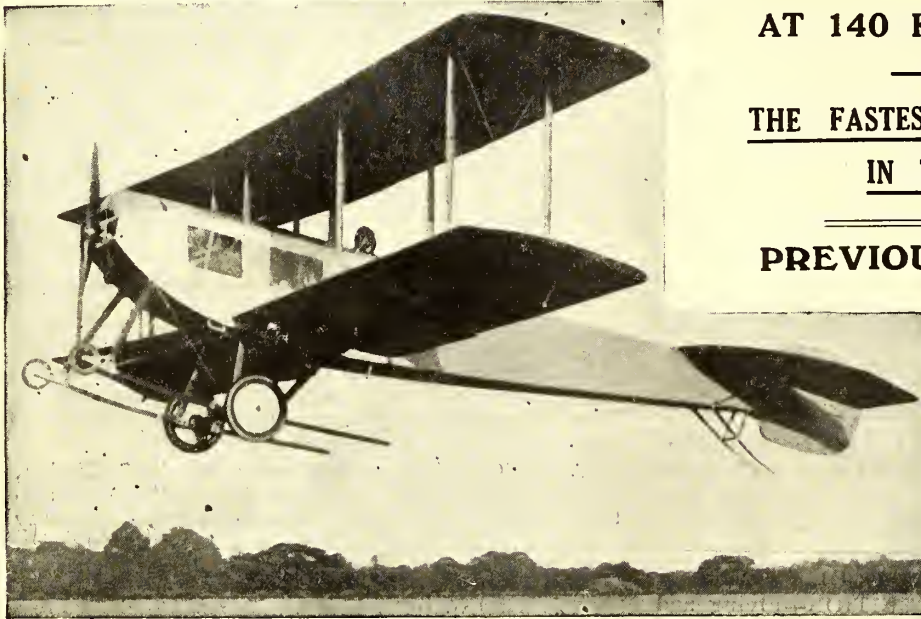
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"THE AEROPLANE," JULY 8TH, 1914.

THE AEROPLANE



Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.]
AS A NEWSPAPER.

WEDNESDAY, JULY 8, 1914.

No. 2

AFRICA FROM ABOVE.



A view of the Italian Military Air Station at Tripoli. The City of Tripoli appears on the right. In the centre is the military airship shed, with the aeroplane sheds behind it. The walled space beyond is the cemetery of the Jews. The landing ground is the sand between the sheds and the sea. The photograph was taken from a military Maurice Farman, and is published by courtesy of the new Italian Service paper "Aer."

The "Bristol" Flying Schools

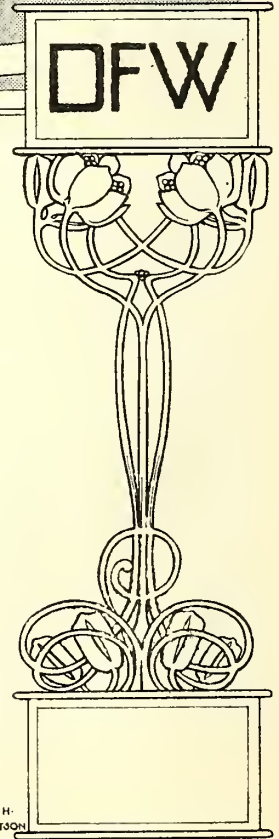
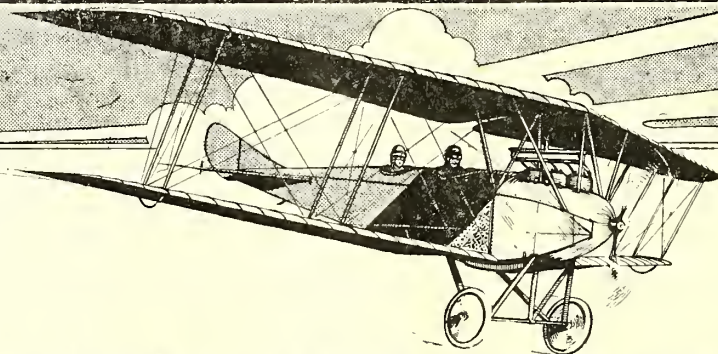
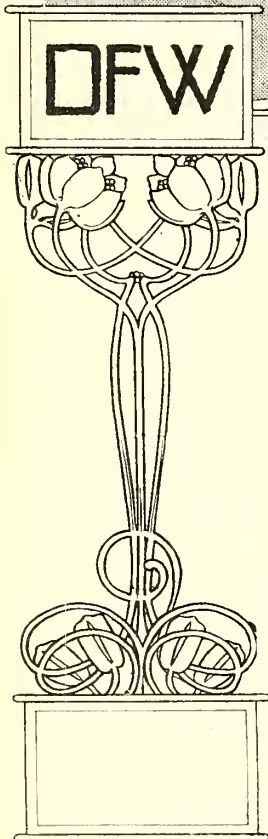
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More Notes on the Royal Naval Air Service.

Now that the Royal Naval Air Service has had time to consider itself and its nice new Seniority List it becomes apparent that the compilers of that list must approximate fairly closely to being Heaven-sent geniuses, for everyone whose name appears in the list seems to agree that everyone else has been put in the right place except himself, and he ought to be about two places further up. Some ambitious youths seem to think they should have been as much as four places higher, but two places seems the average estimated error, and the fact that such singular unanimity exists seems to show that the list is as perfect as any human being could make it.

It has been suggested that if the two officers at the top are promptly promoted, or if two new officers are added at the bottom of the list, everyone ought to be satisfied, because then each one will be two places nearer the top, or two places further from the bottom. I am afraid there is some flaw in the logic of this argument, but it is far too hot at present to work it out. Probably, by the time these notes appear, it will be snowing, but exigencies of the Press decree a lapse of several days between the writing of these articles and their infliction on a long-suffering public, and it is really too much to expect one who is grilling at 85 deg. in the office-desk to chop logic with a hypercritical reader nearly a week ahead who is sitting with his feet in mustard and water after a freezing July day on an aerodrome. In fact, it is almost too hot at present to treat even such an important subject as the R.N.A.S. seriously.

There is, however, one very urgent matter which needs clearing up, simply because all the friends and relations, especially the feminine friends and relations, of the officers of the Royal Naval Air Service will inevitably get tied into such fearsome knots if it is not settled. This is the question of Titles.

Who's Who?

Under the old system "Squadron Commander" and "Flight Commander" were merely grades, and not ranks. That is to say, the officers commanding the air stations round the coast were all graded as Squadron Commanders, except two or three who were left for some time as Flight Commanders. Now these officers would in the ordinary way be addressed on a personal letter as Lieutenant So-and-So, R.N., or Major Such-and-Such, R.M.L.I., or Captain This-or-That, R.M.A., according to what their ranks might be outside the Air Service, or, as in some cases, according to their special promotions or temporary ranks given for Air Service duty. For example, one Naval Lieutenant was made an Acting-Commander, to give him the necessary seniority for his job. Two Captains, R.M.L.I., were made temporary Majors (one of them was later made a Major by brevet) on being graded as Squadron-Commanders, and a Lieutenant, R.M.L.I., graded as Flight-Commander, was made a temporary Captain, this being necessary to give the Royal Marine officers corresponding rank to Squadron and Flight-Commanders in the R.F.C. Military Wing. And, as an additional complication, a Captain of Infantry, with temporary rank of Major while employed as Squadron-Commander, R.F.C. (Military Wing), was given rank as Lieutenant-Colonel on going over to the Navy with the Army airships, so as to give him corresponding rank with Commanders, R.N., commanding the big airships. The consequent complications were somewhat puzzling, but I

gather that everyone drew the pay corresponding to his higher rank, and I have never heard of anyone drawing pay for both ranks, so presumably nothing very violent occurred.

A Matter of Titles.

In the new Service, I gather, as the result of due inquiries, "Wing-Captain," "Wing-Commander," "Squadron-Commander," "Flight-Commander," and "Flight-Lieutenant," are ranks and not merely grades. Apparently, a military officer serving in the R.N.A.S., as Squadron-Commander with Naval airships ceases to be "Major So-and-So, 2nd Mudshires," and becomes "Squadron-Commander So-and-So, R.N.," unless, of course, some special exception is made in the case of the soldiers who have gone over to the Navy. Anyhow, officers of Marines and Naval officers sink their former ranks, and must be addressed definitely as "Squadron-Commander," "Flight-Commander," or whatever their Air Service rank may be.

In addressing letters and so forth this will come easily enough, but colloquially it will be a thorn in the flesh and a trouble to the tongue for some time to come. True, it will be no worse than the new rank of Lieutenant-Commander, recently introduced for two and a half stripe Lieutenants, which is an everlasting pitfall. One may not address these officers as "Commander," because they are not, and to call them "Lieutenant," *tout court*, is to ignore their status in the Service. In the case of Engineer-Lieutenants, conversationally one drops the first half of the title—executive officers tell one it is kind to do so, as it helps them to forget for the moment their terrible antecedents.

There is an evil habit creeping into use of addressing Naval Lieutenants as plain "Mister," as one does subalterns in the Army, but this is not as it should be, for a four-year Lieutenant, R.N., ranks with and before a Captain in the Army, and a two-and-a-half stripe ranks with but after a Major. I have even heard one of the Naval ratings of the Naval Airship Section refer to a senior Lieutenant, who is now a Commander, as "Mr. So-and-So," and this to an officer of Marines, who, strictly speaking, ought to have bitten his face off for his slackness. Presumably, the habit springs from a desire to get away from the daily journalist's custom of tacking on a rank on every possible occasion, which custom reaches its apogee in America, where the title is extended to the victim's wife, so that one reads, for example, that "Mrs. Lieutenant Cyrus Q. Hanks, of the 22nd Infantry" has presented another citizen to the United States, and so forth.

Conversational Obstacles.

However, in the Royal Naval Air Service, apparently, one has to use these mouth-filling titles. Presumably Flight-Lieutenants will be addressed conversationally as "Lieutenant," but "Wing-Commander," "Squadron-Commander," and "Flight-Commander" cannot be shortened without causing confusion. One only hopes that whenever possible, officers owning monosyllabic names, will be selected for these ranks. Imagine, for example, the affable hostess of a festive Southsea bunworry being compelled to say, "Oh! Squadron-Commander Buggyns-deBuggyns-Buggyns! D'you take one lump of sugar or two?" It is making such a big fuss about so little, and yet the woman who was cowardly enough to shun the ordeal might spoil a deserving young officer's whole afternoon. Even on active service the formula has its dis-

advantages, for in these days of 120 mile-an-hour aeroplanes, by the time the look-out man had finished reporting the advent of a hostile aircraft to the above-mentioned hypothetical officer in due and correct form the machine would probably be out of sight.

Also, the civilian who, like myself for instance, has some slight smattering of Naval knowledge, but who is ignorant of the manners and customs of the Air Service may get badly mixed. For example, a Squadron-Commander is obviously an officer who commands a squadron, and if the squadron happens to be composed of anything bigger than T.B.D.s, it is, I believe, a Rear-Admiral's command, if it is not, presumably it is a flotilla and not a squadron. Further, a Flight ordinarily implies a Retreat in a state of hysterical chaos, so how can it be commanded by a Flight-Commander, unless in the sense applied by the "Morning Post," when it remarked, apropos a sudden change of policy by the Irish Party, "Mr. Redmond is evidently one of those who believes that the duty of a leader is to lead—even in retreat"? Also, any aeroplane has at least two wings, so a Flight-Sub-Lieutenant, R.N., presumably commands two wings, and may command four (in a biplane), whereas a Wing-Commander, who must be of about the rank of a Post-Captain, only commands one wing, so where are we, and what sort of wing does he command?

New Commissions.

However, no doubt we shall get used to it all in time. The great point is that whatever the new ranks may be called they are substantive ranks, and all officers of these ranks are executive officers of the Military (or combatant) Branch of the Royal Navy. This accounts for the batch of gazettes published on June 30th, and given under the Naval Notes in this issue of *THE AEROPLANE*. Officers of the Military Branch of the Navy are already executive officers, and so are merely appointed to the Air Service, not needing new commissions, but in the Gazette we find seven Engineer-Lieutenants, R.N., and one Assistant-Paymaster, R.N., who, not being combatant officers, have to receive new commissions as such. Also, we find three Lieutenants, R.N.R., and nine Sub-Lieutenants, R.N.R., all of whom have to be commissioned to the regular Service from the reserve, and two civilians, both of whom have held commissions in the Reserve of Officers of the Army, and are now given commissions direct into the newest Military Branch of the Navy. Truly a complicated business to arrange decently and in order. Yet it has been done, and all these officers have now equal chances, barring the advantages or disadvantages of their present seniority, of rising to high commands in the Royal Naval Air Service. And any others joining from now henceforth and for ever (more or less) have, according to their ability and seniority, equally good chances.

Distinctions of Rank.

There are, however, one or two other matters which seem to need clearing up. For instance, in the Navy one is accustomed to being able to tell at once any officer's branch and rank simply by glancing at his sleeve. In the Air Service certain complications arise, owing to fairly senior officers joining so recently that their substantive Naval rank is higher than the rank they can occupy in the Air Service.

Comparatively junior officers promoted to Squadron-Commanders, R.N.—I am told that it is not necessary, or even correct, to put R.N.A.S. after an officer's name—when in command rank with Lieutenant-Commanders, R.N. and ship their extra half stripe, but there are one or two Lieutenants of over eight years' seniority among the Flight-Commanders and among the Flight-Lieutenants who have only recently joined the Air Service, so there is no visible method of distinguishing them from Squadron-Commanders. Similarly there is no way of distinguishing Flight-Commanders from Squadron-Commanders (not in command), if of less than eight years' seniority, or of distinguishing either from Flight-Lieutenants who are two strippers by virtue of their Naval service. It would be a distinct advantage even to officers and men in the Air Service if some simple method could be evolved of indicating rank at sight, for already the R.N.A.S. is too big a thing for all officers and men to know the various officers personally and remember what their new rank may be.

There is a minor detail which might also be improved upon.—"Naval officers who already belong to the Military Branch will wear the uniform of their rank with the addition of an eagle on the left sleeve above the distinctive lace. Other Naval officers who join the Royal Naval Air Service will wear Naval uniform with the distinctive lace of their relative rank in the Military Branch, and an eagle on the left sleeve above the distinctive lace." That is to say Engineer Officers, and officers of the clerical or constructional branches will wear the same lace as executive officers, and one can tell their naval rank easily enough, but if one fetches up on the starboard side of such an officer one has to circumnavigate him to discover whether his port sleeve bears the official bird or not. That is to say, he may be mistaken for a Naval Officer not of the Air Service.

Non-Naval Officers.

On the other hand, "Others who join the Royal Naval Air Service" (i.e., ex-Army officers, civilians, and so forth—bar Marines, who will, for the time being, wear R.M.A. or R.M.L.I. kit, plus an eagle on the left sleeve) "will wear the uniform of their corresponding rank in the Military Branch of the Royal Navy, with the exception that the anchor on buttons, cap badge, epaulettes, and sword belt will be replaced by an eagle." Apparently the R.N.A.S. officer who was not previously entitled to put R.N. after his name has to ship a whole aviary. It seems a pity to have made the distinction. Why not have adopted uniform for all, say the regular naval kit plus the R.N.A.S. eagle on each sleeve above the executive loop? Doubtless the difference is made to indicate which are real Naval Officers and which are not, but even so, why differentiate? One does not recall that the immortal "Hungry Hundred" had to wear conventionalised loaves on their epaulettes.

However, the eagle badge is neat and not gaudy, and is the distinctive mark of a branch of the Navy which, though it has as yet no traditions and no war record, has done splendid work at great risk to the personnel and has already put this country ahead of all others in its own section of naval activity, so that the R.N.A.S. officer may justly be as proud of his eagle as is the older naval officer of his anchor.

The Royal Naval Air Service is still very much in its infancy, and consequently it offers greater opportunities to a really able officer than does any other branch of the King's Services. The Admiralty wisely makes no promises to anyone in the Air Service as to his future, but the man who has confidence in himself may safely decide to devote his life to it.

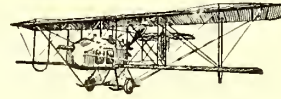
The Period of Service.

"The period of service in the Royal Naval Air Service for officers drawn from the active list, Royal Navy, must be limited by their flying efficiency, and will not, as a general rule, according to present experience, exceed a duration of four years, dating from the time of selection. A certain number will, however, be selected to fill the higher posts in the Air Service. Those officers who are not selected for these higher posts will return to their ordinary duties in the Fleet after the above period, but may be reappointed subsequently for further duty in the Air Service at the discretion of the Admiralty." This, of course, is much as it is in submarines, and a good man who knows his job has special knowledge which is not likely to be thrown away. It is necessary for him to do a certain amount of sea service, just to keep him in touch with modern developments in big ships, but the officer who is an efficient Flight-Commander is not likely to spend his life as a watch-keeper. Apart from this, when one considers our over-sea possessions, it is obvious that the room for expansion in the Air Service is so great that even if every one of the present officers had more than ordinary ability there would not be enough of them to fill the "higher posts" in five years' time.

As for the R.N.A.S. officers not "drawn from the active list, Royal Navy," the terms of engagement are purposely made so elastic that it is obvious that those responsible for the organisation scheme looked far ahead. The official wording quite recalls the wise saying of the Cannibal King who,



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feeling very ill after eating a missionary, remarked, "It is hard to keep a good man down."

The section referred to says: "Other officers will pass into the Reserve at the expiration of four years, unless their term of service is extended, or renewed. On the completion of one year's service they may, if considered suitable, be permitted to extend their original engagement to a total of six years; after four years' service to eight years; and after six years' service to ten years; or alternatively they may be permitted to renew their engagement on its completion in the ordinary course."

Nothing could well be more fair. At the end of a year an officer may find out fairly well how he stands in the estimation of his superiors by asking for a six years' engagement. If he is accepted he may be sure that he is not considered one of His Majesty's bad bargains, and if at the end of four years he is reappointed for another four he may safely reckon that he is regarded with favour. After two years more he can apply for a further four years, to complete a ten years' engagement, and if he is once more accepted he is fairly safe for a pension, for it is absolutely certain that within the next ten years the conditions of flying will have altered so much that the question of broken nerve will scarcely arise to

a greater degree than it does to-day in the larger warships, and consequently a proper scheme of pensions will have been brought into existence.

It appears to me, simply as an observer of human nature, that the officer who applies for an extension of service at one and four and six years is more likely to be regarded with favour than one who finishes his four years before applying for reappointment, for the former shows his faith in, and his keenness for, the new Service, whereas the latter may be regarded as merely hanging on to the end of his four years to see what turns up then, and naturally the man with faith and keenness is likely to be the more valuable to the Service. The keen man is evidently out to build up a career for himself in the Air Service, and is therefore more likely to make an efficient officer worthy of promotion, whereas the other may be merely putting in four years' service as a stepping-stone to a commercial career in which his service experience is likely to be useful.

In an early issue I hope to deal with the financial prospects both for officers and men, but for the moment I feel sure I have taken up enough of my readers' time and attention.—
C. G. G.

The Death of Captain C. P. Downer.

The following Report has been issued by the Accidents Investigation Committee of the Royal Aero Club on the fatal accident to Capt. Cyril Percy Downer, when flying at the Central Flying School, Upavon, on Tuesday, March 10th:—

BRIEF DESCRIPTION OF THE ACCIDENT.—Capt. C. P. Downer was flying a B.E. biplane, No. 453, fitted with a 70-h.p. Renault engine, at the Central Flying School, Upavon, on Tuesday, March 10th, 1914, at about 9.15 a.m. It was the intention of the pilot to practise spiral descents, and he had reached a height of about 2,000 feet. From that height the aircraft was observed to descend in a steep spiral, the angle of descent being nearly vertical. After descending some 1,500 feet, and still about 500 feet above the ground, the right wing collapsed upwards and a portion of the lower plane was observed to leave the aircraft. The aircraft then fell to the ground after making several turns, and was completely wrecked. The pilot was killed.

Capt. Cyril Percy Downer (aged 36) was granted his aviator's certificate, No. 608, on August 29th, 1913, by the Royal Aero Club.

REPORT.—The Committee sat on Monday, March 30th, Tuesday, May 26th, and Tuesday, June 16th, 1914, and received the report of the Club's representative, who visited the scene of the accident within a short time of its occurrence, together with the evidence of eye-witnesses. The calculations of the design and results of tests carried to destruction on a similar aircraft were placed at the disposal of the Committee.

From the consideration of the evidence, the Committee regards the following facts as clearly established:—

1. The aircraft was built by Messrs. Vickers Ltd., in September, 1913.
2. The wind at the time of the accident was about 14 m.p.h.
3. Prior to the accident, the aircraft had been flown by another officer, who had found everything in good order.
4. An examination of the wrecked aircraft revealed the fact that the elevator planes were both bent downwards to the extent of several inches.
5. The control pillar was bent backwards.
6. The control wires were found to be intact.
7. A portion of the lower right wing was observed to leave the aircraft at a height of about 500 feet and was picked up about 25 yards away from the spot where the aircraft fell. A strut was also picked up some 40 yards from the aircraft.
8. The aircraft was constructed in accordance with the official design and passed all the War Office tests.
9. The strength of the aircraft was up to the accepted standard.

OPINION.—The Committee is of opinion that the accident was solely due to the steep and protracted descent of the air-

craft followed by an attempt, due to inexperience, to flatten out too suddenly when descending at an excessive speed, thus subjecting the aircraft to abnormal stresses and fracturing the wing.

The Committee is further of opinion that the bending of the elevator and control pillar was caused by the pilot's violent efforts to flatten out.

It is with very deep regret, and with considerable anxiety, that one reads the report above. For the first time in its existence, during which period it has unfortunately been obliged to issue twenty-four reports on fatal accidents, it seems that the "Accidents Committee," as it is generally called, has failed in its duty and has allowed its report to be influenced by considerations other than those of the welfare of aviation and aviators.

It is impossible for anyone with a knowledge of the facts to read this report without feeling that a deliberate attempt has been made to save the faces of those responsible for the design of the machine. The long delay in issuing the report suggests that an attempt has been made by someone or other to burke the inquiry, for reports on other and far less easily explained accidents have been issued in very much less time.

Mention is made of the fact that "The calculations of the design and results of tests carried to destruction on a similar aircraft were placed at the disposal of the Committee." The furnishing of these "calculations" and tests may well have served to delay the report in the hope that, human memory being short, the scandal of the broken B.E.s might have blown over. Unfortunately for the designers of the machine other rudders and elevators of their design, and in many cases of their own make, have bent, and buckled, and broken. Only a little over a week ago Captain Shepherd's accident reminded Service aviators once more how little trust can be placed in the calculations and tests of the designers of the B.E.s and R.E.s.

The report throws all the blame on the pilot, conscious that the victim of official science cannot reply. Let us then explain for him, as the Accidents Committee is apparently afraid of incurring official displeasure by doing so.

The evidence is clear that the elevator was bent downwards and the elevator lever—or control pillar—was bent backwards. This evidence was not available when this paper's brief report of the accident appeared shortly after its occurrence. From this evidence it is reasonable to assume that owing to the pilot using his lever somewhat abruptly in practising a spiral the elevator (i.e., the flaps behind the tail) bent under what should be a normal flying stress—just as Captain Allen's and Captain Shepherd's rudders gave way, as Mr. Arthur's wing broke, and as various other rudders and

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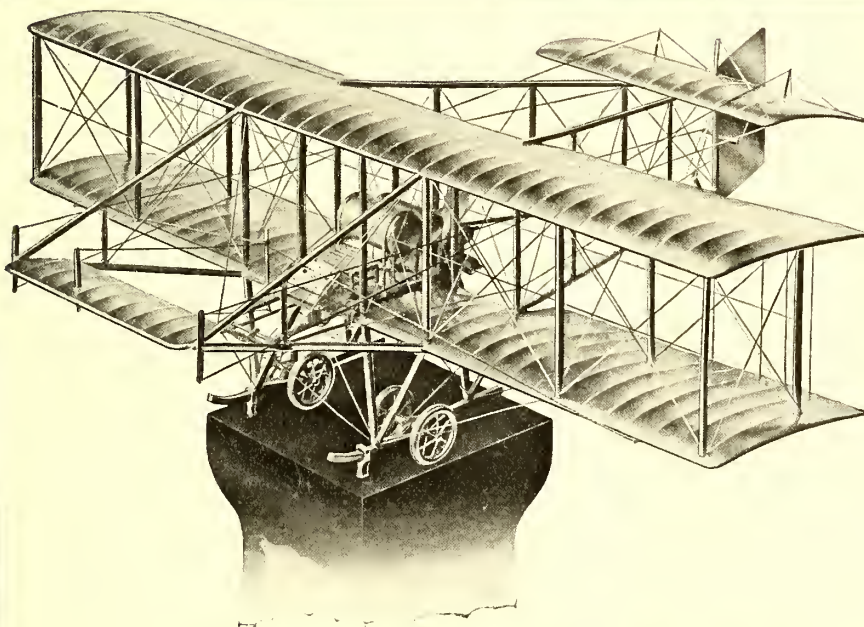
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elevators built by, or to the designs of, the Royal Aircraft Factory have bent or broken.

When the elevator bent there was no means of flattening out from the dive which followed. The victim of defective design, in his despairing efforts to pull the machine back, bent the control pillar *after* his elevator had gone, not knowing that the flaps were bent downward, and, without doubt, thinking that the lever, or the elevator, or a wire, had jammed and might be forced free.

At last the speed reached was so great that the wings—also of the defective R.A.F. design—collapsed under the strain of the dive. Recollect that there were no compression members between the spars, and that the B.E. ribs have most of their strength destroyed by the method of fixing, so that, no matter how well made they might be by an outside constructor building under contract, they would be bound to collapse in a steep dive simply owing to bad design being unable to stand the head-resistance.

To put it briefly. The Committee's opinion that "the accident was solely due to the steep and protracted descent of the aircraft followed by an attempt, due to inexperience, to flatten out too suddenly, . . . thus subjecting the aircraft to abnormal stresses and fracturing the wing," is not worth the paper it is written on.

If the elevator and control pillar had *not* been bent then a sudden attempt to flatten out might have been the cause of the wing breaking, but the mere fact of the elevator bending

would make a sudden flattening out impossible—and it would certainly cause the fatal and uncontrollable dive. Also, the control-pillar could not have been bent simultaneously with the bending of the elevator. It can only have been bent in a last effort to achieve the impossible, namely, to depress the tail with an elevator which was already past fulfilling its purpose.

In any case, control surfaces which a pilot can bend or damage by muscular effort while flying are not up to their work, and that alone is sufficient condemnation of the design. Is a pilot on active service when chasing, or being chased by, a hostile aircraft, to hesitate and decide whether the design of his machine is such as to permit him to make the desired manœuvre without the breaking or bending of a vital part?

The changing of the rudders of B.E.s at Netheravon after Captain Shepherd's accident, the wholesale alterations in wing design and construction, the changing of all warp wires after a few hours' flying, the adoption of ailerons instead of warping wings in the later B.E.s, and various other matters, show that the military authorities realise the truth of the various criticisms of B.E. design which have appeared in this paper. Why, then, is it necessary for the Accidents Committee to stultify itself, and to destroy the faith of aviators and constructors alike in the impartiality of its decisions, simply to whitewash a machine which has been admitted to be defective in design?—C. G. G.

The Royal Aero Club.

At the committee meeting on June 30th the following aviators' certificates were granted: 813, John Lankester Parker (Vickers biplane, Vickers School, Brooklands), June 18th, 1914; 814, Reginald Chambers (Bristol biplane, Bristol School, Brooklands), June 18th, 1914; 815, Laurence Gresley (Bristol biplane, Bristol School, Brooklands), June 19th, 1914; 816, Lieut. Bernard Edward Smythies, R.E. (Bristol biplane, Bristol School, Brooklands), June 19th, 1914; 817, Lieut. Francis Hermann Eberti, R.G.A. (Vickers biplane, Vickers School, Brooklands), June 24th, 1914; 818, Midshipman Geoffrey Cayley Lambert Dalley, R.N. (Wright biplane, Beatty School, Hendon), June 24th, 1914; 819, Lieut. Leslie Fitzroy Richard, R.G.A. (Bristol biplane, Bristol School, Brooklands), June 24th, 1914; 820, Lieut. Charles Nugent (Royal Berks Regiment) (Bristol biplane, Bristol School, Brooklands), June 24th, 1914; 821, Capt. Henry Edward Charles Walcot (Bristol biplane, Bristol School, Brooklands), June 24th, 1914; 822, Lieut. Gordon Shergold Creed (S.A. Defence Force) (Maurice Farman biplane, Central Flying School, Upavon), June 24th, 1914; 823, Lieut. Basil Hobson Turner (S.A. Defence Force) (Maurice Farman biplane, Central Flying School, Upavon), June 24th, 1914; 824, Sub-Lieut. Herbert Graham Wanklyn, R.N.R. (Maurice Farman biplane, Central Flying School, Upavon), June 24th, 1914; 825, John Gordon Miller (Vickers biplane, Vickers School, Brooklands), June 26th, 1914; 826, Ronald Stuart McGregor (Caudron biplane, Caudron School, Hendon), June 26th, 1914.

EXPLOSIVES FACTORY AT HARTY, ISLE OF SHEPPEY.—It was decided to oppose the application of Nobel's Explosives Co., Ltd., for a licence to erect an explosive factory at Harty, Isle of Sheppey, and Prof. A. K. Huntington was appointed to represent the Club at the hearing on the 6th inst. at the Sittingbourne Petty Sessions.

"DAILY MAIL" CIRCUIT OF BRITAIN RACE.—Letter from the Grahame-White Aviation Co., Ltd., asking for a postponement of the date of start, was read and the secretary was instructed to ascertain the views of all competitors.

The Seaplane Circuit.

The Committee of the Royal Aero Club at its meeting last week considered the question of postponing the start of the race till Monday, August 10th. All the competitors having agreed to this postponement, it has now been arranged for the contest to be open from Monday, August 10th, till Saturday, August 22nd, 1914. This is really a better arrangement, as the earlier date would have interfered with the Bank Holiday Meetings at Hendon and Brooklands.

A marriage has been arranged, and will shortly take place, between Shirley Falcke, 3, Cleveland Row, St. James's, and Mary, widow of Henry Jacob Delaval Astley, of Lynstead Lodge, Sittingbourne, Kent.



Lord Carbery's Bristol Scout, as it now appears with an 80-h.p. Le Rhône engine.

The N.P.L. on Stability.

BY W. H. SAYERS.

Report No. 75 in the Report of the Advisory Committees on Aeronautics deals with the experimental determination of the forces and moments on a model of a complete aeroplane. The first part of the report deals with the apparatus and the mathematical methods employed to obtain the desired results from the readings of the apparatus. The experiments were actually made on a 1-20th scale model of the now obsolete Blériot side-by-side two-seater with a completely covered fuselage. [This was the "pigcon-tail" type. It was one of M. Blériot's few failures, and a very useless machine to investigate.—ED.]

The first series of tests were carried out with a wind-flow parallel to the longitudinal axis of the machine at various angles of incidence. Tests were made with the chassis and without it. Determinations were made of the pitching couple—the tendency to alter the angle of incidence of the machine—of the forces at right-angles to the propeller axis—practically the lift—and of the forces parallel to the propeller axis, equal to the propeller thrust required to overcome that component of the total air resistance of the machine parallel to that axis.

The figures of pitching moment show that from minus 8 degrees to plus 16 degrees inclination of the flat underside of the body this machine has always a tendency to return to an horizontal position of the bottom surface of the body—that is, that it is longitudinally stable over this range of angles under the conditions of these experiments. The presence or absence of the chassis made no appreciable difference either to the longitudinal stability or to the force corresponding to lift. [The late Mr. Hamel told me several times that if this machine was put into a glide with the engine stopped she almost refused to come back, so that apparently the model must have been wrong somewhere. Though, of course, a very stable machine with a very small speed range and a bad gliding angle might behave in the same way.—ED.]

The latter force varies with the angle of incidence, just as the lift of an ordinary aerofoil, increasing almost in direct proportion to the angle of the wings from a body angle of minus 8 degrees (wing angle minus 2 degrees) to a body angle of about 10 degrees (wing angle 16 degrees), where the critical angle of the planes is reached, and a further increase leads to a less rapid rise and then to a fall in the force at right-angles to the wings.

The longitudinal force, which is a quantity altogether different from the "drift" of the machine, or from the propeller thrust actually required to sustain the machine—except when the model is horizontal, seems at first sight to be a quantity due to the misguided ingenuity of the N.P.L. staff, as it is certainly not directly measured on the instruments employed, and gives no direct information except as to the possibility of the machine soaring. In this particular case the machine could not soar in any wind having a vertical component.

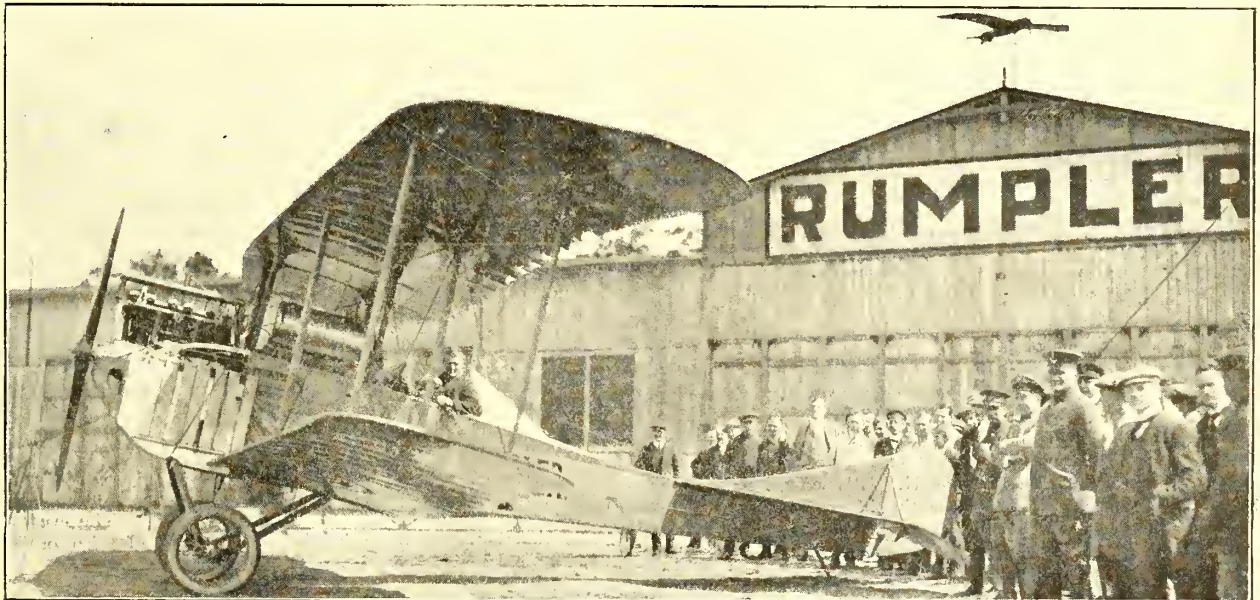
In the mathematical analysis of the stability of aeroplanes the N.P.L. find it convenient to deal with forces acting along axes fixed relatively to the machine itself, and not along truly vertical and horizontal axes; and one gathers that it is for this reason that the forces determined in this set of experiments were not true lift or drift forces. As has already been said, the force at right angles to the planes is practically the lift, and the true lift and the true drift could be deduced from the figures given.

A second series of experiments was then made with the body of the model horizontal but at various angles laterally to the wind—i.e., in a wind having a sideways component, or the equivalent of a machine slipping sideways. The force on the side of the body, etc., tends to stop such slipping, and in the model the centre of side pressure was found to be behind the centre of gravity, tending to turn the nose into the wind—i.e., the machine was directionally stable. This is, however, to be traced to the rudder, which was fixed in the model. [In practice, it was found that this type of machine had a decided tendency to spin directly the rudder was moved, which is natural when one considers that moving the rudder removed the only real vertical surface behind the centre of gravity. Again it is shown how dangerous theory without practice may be.—ED.]

It was also found that slipping sideways disturbs the longitudinal stability, and that in a side wind there was a tendency to depress the tail, which increases with increased angles.

Some Water Experiments.

Report No. 76 gives results of photographic investigation of the flow of water round model aerofoils. As the laws governing the flow of all fluids is similar, these experiments indicate



Herr Basser on the Rumpler biplane (100-h.p. Mercédès) on which he raised the world's duration record to 18 hrs. 10 mins. on June 24th. This is the first biplane built by the Rumpler firm.

the nature of the flow of air round similar bodies. The aerofoil used was of section R.A.F. 6, and the speed of flow of the water was .5 inches per second. Drops of oil were mingled with the water and were so illuminated that each drop showed up bright against the water, which was by comparison dark. By giving a definite time exposure, each drop traced a white streak on the photograph, and the length of each streak gave a measure of the speed of the corresponding drop.

At angles of incidence of the model between minus 2 degrees and plus 8 degrees there is no sign of turbulence, and the flow follows the outline of the plane section. Drops close to the surface of the model show a greatly reduced speed of flow, and the disturbance can be traced to a considerable distance both above and below the plane.

At 10 degrees there is a distinct eddy forming behind the trailing edge of the plane. This eddy is not permanent and steady, but forms, breaks away, and travels down stream, to be succeeded by another at different intervals varying with the angle of incidence and the rate of flow of the fluid. This eddy motion becomes more and more marked as the angle increases, and at 20 degrees is very violent. Above about 16 degrees the eddy motion is much more marked than the general downward deflection, accounting for the increasing drift without increased lift above this angle.

A series of cinematograph photos of the eddy behind a model aerofoil at 24 degrees incidence and behind a cylinder are also given, which show clearly the growth and breaking away of the eddies which occur in these cases.

Stability Investigations.

Report No. 77 is devoted to an investigation of the stability of aeroplanes. This opens with a discussion of the meaning of stability—an inquiry into its desirability, concluding with the decision that such stability as is necessary to the maintenance of a sufficient flying speed is eminently desirable if not essential, but that it may be advantageous that a machine should not be too stable directionally or laterally.

In order to design a machine having a definite degree of stability an accurate knowledge of all the forces and reactions on the various parts of the machine under various conditions is necessary, and these data can only be obtained by experiments on models. Such work has been carried on at the National Physical Laboratory during the year previous to this report (dated March, 1913).

Up to that date the method adopted was that of making tests in the wind tunnel on a complete model of a machine, and thence deducing its qualities and modifying it with a view to improvement, thereafter retesting to discover the extent of the

Inherent Stability in Wings.

Commenting on the Advisory Committee's report on wings with reversed curvature, in THE AEROPLANE of June 11th, the desirability of tests on wings with swept-back and up-turned wing tips was suggested. It is, therefore, interesting to learn that a model of a Handley Page wing has been tested at the N.P.L. for Mr. Handley Page.

The comparison between the N.P.L.'s own wings with turned-up trailing edges and the Handley Page wing is interesting.

The lift to drift ratio of the deduced N.P.L. wing which gave a practically stationary centre of pressure and neutral longitudinal stability is about 13 at its best angle. That of the Handley Page wing, in which the C.P. moves forward steadily as the angle of incidence decreases, giving a considerable degree of inherent stability, is 14.9 at 6 degrees, or nearly equal to that of R.A.F.6. The greatest lift coefficient of the Handley Page wing occurs at 15 degrees, and is slightly higher than that shown by the N.P.L.'s experiments with their own up-turned wings, while the lift coefficient at 6 degrees is about 12 per cent. higher than the turned up trailing edge wing. Also, the Handley Page wing gives inherent longitudinal and lateral stability, while the N.P.L. type only gives neutral longitudinal stability.

It may be well to point out that the righting couple formed by the centre of pressure travelling forward in the Handley Page wing is really caused by downward pressure on the

effect. This is an eminently sane and useful method and produces immediate results; but the work dealt with in the present report is more elaborate and aims at the complete and detailed examination of all the contributory effects of the various parts of machines, and the establishment of a complete mathematical analysis of the stability of aeroplanes. This work is naturally laborious and may well take years to complete, and it is greatly to be hoped that the previous methods will not be entirely abandoned.

The report deals briefly with the need for securing steadiness in wind fluctuations, and the possibility of abnormal conditions of flight in which a normally stable machine might become unstable, of the conflicting requirements of stability and controllability, and also discusses the value of automatic control, concluding that ultimately a combination of a machine with a small degree of inherent stability and an automatic control-gear which can be disconnected at will may be found desirable. The report then goes on to a mathematical consideration of the subject in which the methods of Mr. Lanchester and Professor Bryan are closely followed. This part of the report can scarcely be summarised, and those interested are referred to the Blue Book itself.

Report No. 78, on "The Experimental Determination of Rotary Coefficients," again deals with the mathematics of stability, and describes methods of arriving at some of the data required for this purpose from experiments on models, and are again not such as can be summarised.

Report No. 79 discusses the longitudinal and lateral stability of the "sociable" type Blériot, on the basis of the two previous reports. The results obtained by the mathematical methods therein indicated show this machine to be longitudinally stable but somewhat unstable laterally.

Fin Effect of Propellers.

Report No. 80 deals with the fin effect of propellers. The probable value of such an effect is calculated, and is shown to be distinctly important; and for a B.E.2 with a side wind at an angle of 5 degrees the directional effect tending to make the machine turn down wind is nearly five-eighths of that due to the whole of the body.

Report No. 81 deals with the gyroscopic forces due to rotary engines and to propellers. The effect of a 100-h.p. Gnome is less than that due to its propeller alone, and the maximum value of the effect is well within the ordinary control range—being equivalent to a not very large gust—"but whose direction and magnitude is known and expected." [Which seems to suggest that a geared-down propeller running in the direction contrary to the engine might cancel out the disturbing forces.—Ed.]

upturned wing tips, and that this downward pressure does not apparently add materially to the "drift." It is probable that longitudinal stability obtained in this way may be more economical than a similar degree of stability obtained by means of a large flat tail.

The Sussex County Aero Club.

On Saturday, July 11th, and Sunday, 12th, at 3.30, there will be exhibitions of looping the loop by Mr. J. L. Hall on his Avro. There will be a race for the Brighton Cup and £100 cash, presented by the proprietors of Shell motor spirit, followed by exhibition and passenger flights by well-known aviators. Mr. Hall will make an attempt on the British altitude record.

Play in the fortnightly tennis tournament commences at 10.30. The last tournament was won by Mr. and Mrs. P. Walker.—H. GONNE, Sec.

Racing at Brooklands.

The August Race Meeting of the Brooklands Automobile Racing Club will be held on Monday, August 3rd. The events will include an aeroplane handicap for prizes of £50 or a cup, £25 or a cup, and £10 or a cup.

Gliding.

Any readers of THE AEROPLANE interested in gliding experiments are invited to communicate with Mr. E. J. Field, 4, Marquis Road, Wood Green, N.

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Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," July 1st, 1914:—
ROYAL NAVAL AIR SERVICE.

Engineer-Lieuts. Gerald West Storey Aldwell, Charles Russell Jekyl Randall, and Edward Featherstone Briggs, to be squadron commanders; Wilfred Briggs, Thomas Reginald Cave-Browne-Cave, Henry Meyrick Cave-Browne-Cave, and Charles Dempster Breeze, to be flight lieutenants.

Assistant-Paymaster Charles Robert Finch Noyes to be lieutenant.

The following officer of the Royal Naval Reserve has been appointed a flight commander: Lieut. James Lindsay Travers.

The following officers of the Royal Naval Reserve have been appointed flight lieutenants: Lieuts. Reginald Lennox George Marix and Hugh Alexander Littleton; Sub-Lieuts. Ian Hew Waldegrave Stair Dalrymple-Clark, Ivor Guy Vaughan Fowler, Ronald Hargrave Kershaw, Thomas Alfred Rainey, Douglas George Young, Richard Edmund Charles Peirse, Christopher Draper, Hans Acworth Busk, and Edward Thomas Newton-Clare.

The following gentlemen have been appointed flight lieutenants: Right Hon. Lord Edward Arthur Grosvenor and Charles Francis Beevor.

Dated July 1st, 1914.

NAVAL.

The following appointment was made at the Admiralty on July 1st:—

PROMOTION.—Flight Lieut. A. W. Bigsworth has been advanced to rank of Flight Commander, with seniority of July 1st, and appointed to the "President," additional, as Flight Commander for Calshot Naval Air Station.

The Royal Review, to which reference was made last week, is to take place on July 18th at Spithead. Five flights of seaplanes will take part therein. "A" Flight, the War Flight from Isle of Grain, under Squadron Commander Seddon, R.N., will be composed entirely of Short tractors, "B" Flight, from Dundee, plus a couple of new machines, under Squadron Commander Gordon, R.N. (hitherto Major, R.M.L.I.), will also be composed of Short tractors. "C" Flight, from Felixstowe, under Squadron Commander Risk, R.N. (hitherto Captain, R.M.L.I.), will consist of Maurice Farman seaplanes. "D" Flight, from Yarmouth, plus a machine from Felixstowe, under Squadron Commander Gregory, R.N., will consist of Henri Farman's. "E" Flight, at Calshot, under Squadron Commander Longmore, R.N., will consist of Sopwiths, presumably tractors and bat-boats.

The twenty machines will be concentrated at Calshot at the end of this week. One gathers that, all being well, they will

fly past the King in the alphabetical order indicated. If that be so, it seems curious that the "Flights" were not lettered in order of the seniority of the respective Squadron Commanders, or in accordance with the age of their respective stations, or else geographically. The present order seems even more arbitrary than promotion in the R.N.A.S.

It seems likely that various machines of the types intended to take part in the Review will be held in reserve at Calshot, in case of one of the others being put out of action, so that altogether there will be thirty or forty machines in Southampton Water, and an excellent opportunity is thus offered of seeing the manoeuvres of seaplanes in quantities.

* * *

At Eastchurch on Monday B.E.s Nos. 49 and 50, Bristol tractors Nos. 43 and 153, Henri Farman No. 31, Shorts Nos. 3 and 64, Short gun-carrier No. 66, Short sociable No. 152, and D.F.W. No. 154 were out. On Tuesday, Shorts Nos. 62 and 152, D.F.W. No. 154, H. Farman No. 31, M. Farman No. 70, Bristol No. 43, and B.E. No. 49 flew. On Wednesday, Shorts Nos. 1 and 2 and Bristols Nos. 43 and 153 made flights, and on Thursday Shorts Nos. 1, 64, and 152, H. Farman No. 31, and Bristol No. 43 were in use. On Friday the Short side-by-side machine No. 152 flew to Grain and back, and on Saturday the same machine and Short No. 64 were out.

* * *

Owing to preparations being made to transport stores, spare parts, tents, etc., to Calshot for the King's Review this month, little or no flying has lately been done at Yarmouth.

On June 29th, Flight-Lieut. Bone flew to Felixstowe on M. Farman seaplane No. 29 to inspect the H. Farman seaplane he is to fly from that station to the review. He left later on No. 29 for Grain, that machine having been allocated to Grain for instructional purposes. The flights were made without incident. The officers and men at Yarmouth have taken up their quarters in the old coastguard station on the front. The building is known as the Coast Defence Station and was completely overhauled and redecorated before the Air Service took possession.

* * *

On Monday the Sopwith bat-boat (90-h.p.) was taken out from Calshot in the morning. While E.R.A. Parrott was starting up, the engine back-fired, and the starting handle flew back and injured his ribs. He is progressing favourably. The Sopwith Anzani tractor was taxied over to Hamble from Calshot for repairs, and a Sopwith, for the Greek Navy, was flying late in the afternoon from Woolston. Two other Sopwiths have arrived at Woolston for test. On Tuesday a new Short seaplane arrived at Calshot, and was then erected for tests. On Thursday Mr. Winston Churchill paid a visit to



(Photograph by Emoney, Felixstowe.)

The Royal Naval Air Service at Work.—A Maurice Farman (100-h.p. Renault) and a Henri Farman (100-h.p. Gnome) starting out from the Felixstowe Air Station. Harwich is seen in the distance. The pilot of the H. Farman is seen on his way to the machine. The soldiers in the foreground are Special Reservists training in the neighbourhood.

Calshot, and there was a little flying, both morning and afternoon. On Friday a little flying took place early in the morning.

MILITARY.

The following communiqués have been received:—

Royal Flying Corps (Military Wing).—Diary of work for week ending June 27th, 1914.—Concentration Camp:—

Headquarters, Nos. 2, 3, 4, 5, and 6 Squadrons, Aircraft Park and Headquarter Flight:

On Monday, the 22nd instant, two composite squadrons took part in the King's Birthday Parade Reviews at Aldershot and Salisbury Plain. The composite squadrons consisted of flights of the following machines: B.E., Blériot, Sopwith and Henri Farman. In each case the machines and detachments were inspected and then flew past the saluting-point.

The training programme consisted of aircraft and M.T. exercises, speed, climbing and landing tests. Experiments, lectures and discussions were carried out daily during the remainder of the week.

The camp was visited on Friday, June 26th, by the Prime Minister, who was accompanied by Mr. Harold Baker, M.P., Financial Secretary of the War Office. General Hubert Hamilton and several members of the Headquarter Staff of the Southern Command were also present.

The party motored from Andover to one of the temporary landing-grounds selected in connection with the aircraft exercise for the day.

The Prime Minister examined various observers' reports, and then watched the machines leave for Netheravon. Motoring on to Netheravon, he inspected the sheds and workshops. After luncheon he witnessed flights by various types of machines, and after inspecting No. 2 Squadron, and visiting several barrack blocks, the Institute, and sergeants' mess in camp, the party left for Upavon to visit the Central Flying School.

The camp will break up on July 2nd. Headquarters and Headquarter Flight, Aircraft Park, and No. 6 Squadron will proceed to Farnborough. No. 5 Squadron will move to Gosport and No. 2 will return to Montrose. Nos. 3 and 4 Squadrons remain at Netheravon, and Nos. 1 and 7 will gradually be built up at Farnborough.

The annual athletic sports were held on June 20th, Headquarters winning the inter-squadron cup.

During the week No. 5 Squadron won the inter-squadron boxing challenge cup and No. 2 Squadron the cross-country run. The final of the inter-squadron cricket cup will be played early next week.

War Office, July 3rd, 1914.

Royal Flying Corps (Military Wing).—Diary of work for week ending July 4th, 1914.

Concentration Camp.—Headquarters, Headquarter Flight, Aircraft Park, Nos. 2, 3, 4, 5 and 6 Squadrons:—

The training programme was continued up till Thursday, on which day the Camp broke up. On Monday, the 29th, the Camp was visited by Lord Roberts, the First Lord of the Admiralty, and a party of Military Attachés. After the aircraft exercise in the morning, Lord Roberts presented cups for the various inter-squadron competitions. In the afternoon, a number of machines were paraded, and, ascending at intervals of one minute, flew a circuit of the Plain.

On the 30th, the aircraft exercise consisted of machines searching for a disabled aircraft represented by a balloon. The balloon ascended at 10 o'clock from an unknown point, some thirty miles from Netheravon. The balloon was located by 50 per cent. of the machines, each machine on seeing it having to circle round so that the number on its tail could be seen by the pilot of the balloon. The day was hazy, with the result that the balloon could only be seen at a maximum distance of eight miles. The altitude of the balloon varied from 2,000 to 5,000 feet.

On the morning of the 2nd the Commanding Officer held a final conference attended by all officers. The main features of the work which had been done during June were touched on, the Aircraft and H.T. exercises, speed, climbing and landing tests with machines of various types and ages, experiments, night flying, lectures and discussions. The concentration has been of much value from many points of view.

The following letter has been received from the War Office:

"I am to inform you that the Secretary of State for War has expressed his appreciation of the excellent arrangements made for the Concentration of the Military Wing of the Royal Flying Corps at Netheravon, and of the good work which has been carried out by the Corps during the past month."

Headquarters, Headquarter Flight, Aircraft Park, and No. 6 Squadron returned to Farnborough on Thursday; Nos. 3 and 4 Squadrons remain at Netheravon, their permanent station. No. 5 Squadron moves to Fort Grange, Gosport, a new station, on Monday next, and No. 2 will start their journey back to Montrose on the 13th.

The training during the ensuing months leading up to manoeuvres will consist of reconnaissance work with the cavalry, with brigades and divisions, observation of artillery fire, experiments and long cross-country work.

The development of the two new Squadrons, Nos. 1 and 7, is being continued at Farnborough.

War Office, July 7th, 1914.



Photograph by Fuller, Amesbury.

At the Concentration Camp.—Foreign Military Attachés with officers of the R.F.C. viewing the machines. An Avro, a Blériot, and five Henri Farmans are seen in the picture.

Orders have been received at Montrose to make preparations for the return of No. 2 Squadron, and the machines are scheduled to arrive on the 15th of this month. The aerodrome is now about ready, and the motor-roller has been working hard and has made a considerable improvement. The Maurice Farman was out in some test flights in the beginning of the week.

* * *

The "Morning Post" intimates that the marriage is now announced as having taken place quietly early in the year between Capt. G. W. Dawes, Royal Berkshire Regiment and Royal Flying Corps, and Margaret, elder daughter of Mr. and Mrs. E. G. Money, of 2, Buckingham Palace Mansions. Capt. Dawes is one of the earliest of British aviators, having taken his certificate, No. 17, on a Humber copy of a Blériot at Wolverhampton on July 26th, 1910. Shortly afterwards he went to India with his regiment and flew several Humber monoplanes at Allahabad, thus becoming the first British officer to fly in India. He is a skillful and steady flier, an excellent officer, and one of the most generally liked men in the R.F.C. One ventures to wish him and his bride every happiness, belated though the good wishes may be.

* * *

A marriage has been arranged, and will shortly take place, between Second Lieut. Alan Hartree, Royal Flying Corps, fourth son of Mr. and Mrs. Hartree, of Havering, Tunbridge Wells, and Gladys, only daughter of the late Mr. James Henderson and of Mrs. Buchanan Hughes, of Berlin.

* * *

On Tuesday of last week a new manœuvre was carried out by the R.F.C. from the Concentration Camp at Netheravon. It was based on the idea that an airship with disabled engines had been seen in the district including Cirencester, Fairford, Lechlade, Swindon, Farrington, Uffington, Minety, and Kemble. An aeroplane force was sent to discover this airship. The airship was represented by a balloon, piloted by Major Brabazon. The manœuvre constituted a competitive test between squadrons, a time allowance being made for the different types of machines. The balloon ascended from Highworth, eight miles from Swindon, and about fifty miles from Netheravon.

The aeroplanes had first to find the balloon, and then circle round it left-handed, keeping not less than three-quarters of a mile from it, but near enough to allow the numbers on the machines to be noted by the balloonists. The aeroplanes, which included Blériots, Henri Farmans, Avros, B.E.s, and Sopwiths of Squadrons Nos. 2, 3, 4, 5 and 6, commanded by Majors Burke, Brooke-Popham, Raleigh, Higgins, and Beeke, left at 10 a.m. at intervals of two minutes. The balloon had to rise to not less than 2,000 ft., and remain aloft until 1 p.m. The result was remarkably successful, as about thirteen of the twenty-five aeroplanes found the balloon.

* * *

In the balloon chase on Tuesday of last week two accidents occurred. Owing to inlet valve trouble Major Brooke-Popham on a Blériot had to land hurriedly, and collided with a brick wall. The machine was badly smashed, but Major Brooke-Popham luckily was not injured. Another officer on a Henri Farman biplane had engine trouble, and also had to land on bad ground, damaging the machine, although he escaped unhurt. Another mishap the same morning occurred to a Sopwith biplane flown by Major J. F. A. Higgins from Farnborough. On landing at Netheravon, one of the wheels collapsed on rough ground, and the machine was damaged, Major Higgins escaping unhurt.

SOUTH AFRICA.

Bruno Buechner, the German aviator at present giving demonstrations in the German African colonies, has been prohibited from flying to Cape Town and Durban, with exhibitions in these towns, by the South African Government. The reasons are said to be purely military.—B.

FRANCE.

On June 30th Captain Gerard, chief pilot at Reims, made a flight from Reims, landing successively at Douai, Crottoy, Saint

Cyr, and Mailly, and returning to his station, a total distance of 430 miles.

On July 1st twelve aeroplanes flew from their several stations at Maubeuge and Reims to Charleville in an hour and a half. Officers of the General Staff were carried as passengers.

During the month of June Lieut. Levassor made the following voyages on a Voisin biplane fitted with a 7-cylinder 90-h.p. Salmson motor:—Mourmelon, Valenciennes, Dunkerque, Lille and Mourmelon—Mourmelon, Mézières, Lille and Mourmelon—Mourmelon, Verdun, Nancy, Mourmelon—Mourmelon to Poitiers, without landing, in 4hrs. 10mins.—Poitiers, Tours and Chartres.—Chartres, Evreux, Mourmelon. During the last flight the journey between Evreux and Mourmelon was performed without a stop in 2hrs. 40mins., 22 gallons of petrol and 2.2 gallons of oil being consumed in this period. During the whole month the motor ran without a single misfire, and gave the greatest satisfaction in every way.

GERMANY.

On June 29th a new aerodrome was inaugurated at Frankfurt-on-Oder. Numerous military and civil aviators were present, and six military aeroplanes and a Zeppelin assisted at the ceremony.

An aerial journey of a week was completed on June 26th by the Bavarian aviators, Lieuts. Schuermann and Sendel, who flew from Munich to Leipzig, Berlin, Hamburg, Hanover, Gotha, and then home again. There was unusual activity in Bavarian military aviation circles during the last days of the month, a squadron travelling to Neu-Ulm to be present at the centenary jubileations there of the 12th Bavarian Infantry Regiment and circling over the public buildings and fête-grounds.

The jubilee Zeppelin No. 25 (Z9 on the Army List) is ready for its preliminary tests.

It is proposed to erect two new airship hangars in Alsace-Lorraine during the year, the expenses being granted by the Imperial Diet.—B.

RUSSIA.

On June 30th Capt. Bojaroglo was flying with a passenger at Pskof and sustained an accident in which he was killed and his passenger was injured.

ITALY.

Probably, for good scientific reasons, and not merely to revel in the intense heat of 2nd inst., P5 navigated over Verona for two hours at 7,500 ft. Having chosen lunch time for her descent Capt. Mergari—in spite of the hour being about the worst (or best) for test purposes—managed to land his vessel without any undue static disorders being noted.

A scheme for the complete reconstruction of the Aerial Forces of this country, hoped for by many as a remedy for all their ills and evils, is being seriously considered.

MIL., to which has been fitted a new nacelle on Parseval lines, turns out to be very considerably faster since the change. P2 is still flying for useful objects—T. S. H.

TURKEY.

It is reported that it is the intention of the Turkish Government to establish three naval aviation centres, where the machines on order, mentioned in the last issue, will be stationed. Twenty-five officers are to start training forthwith, and for this purpose three Blériot "Penguins" have been purchased. One station will be established at San-Stefano under command of Capt. Gova, of the French army.

In addition to the 30 Nieuport seaplanes now on order the Turkish Government is purchasing a number of Bréguet seaplanes fitted with 200-h.p. Salmson motors.—And still no British manufacturer is competing for the business.

SWITZERLAND.

The Swiss Union Council has decided to purchase for the present only German machines for its army, and has placed an order for six biplanes with the Luftverkehrs-Gesellschaft at Johannisthal.—B.

DENMARK.

Lieut. Hock continues his fine flights on one of the naval Leveque flying-boats, among his recent passengers being most of the commanders of the submarines. Prince Waldemar, the uncle of the King of Denmark and father of the certificated aviator, Prince Axel, has made two flights with him too, one

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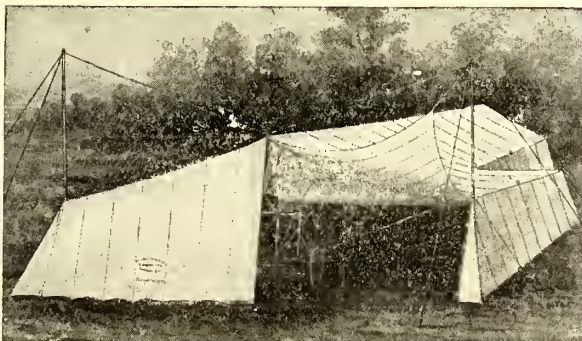
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of which went over the capital, and the other one over the English fleet in the harbour of Copenhagen. Prince Waldemar was much fascinated by his flights, and so was, too, the English Commander Fuller, of H.M. battleship "Cumberland," who also went up with Lieut. Hoeck, this being his first flight.

Foreign Notes.

France.

On Saturday, June 27th, M. Maurice Farman, accompanied by Mme. Farman, left Buc and followed the windings of the Seine to Deauville. On the following day they flew back, reaching home without incident. The Marquis de Lareinty-Tholozan made a similar journey, also accompanied by a passenger.

On June 30th Mr. Claude Grahame-White paid a visit to Buc and made several flights on a Henri Farman biplane (80-h.p. Gnome). M. Gaubert also made lengthy flights on his Aviatik biplane.

On June 29th Capt. Sundstedt on his Henri Farman biplane flew from Buc to Renver in Holland in six hours. Restarting, he reached Bremen in Germany at 7.30 p.m. Next day he left Bremen at 6.30 a.m. and flew to Malmö in Sweden without stopping, arriving at 10.45 a.m.

On Saturday last, July 4th, M. Fourny started on an attempt on the world's duration record on a Farman biplane round the circuit Etampes-Cecotte. He carried 700 litres (154 gallons) of petrol. After several circuits he abandoned the attempt owing to a high wind.

M. Pierron is one of the few Frenchmen who have taken up flying purely as a sport. He flies a Blériot monoplane (50-h.p. Gnome). On June 21st he flew from Buc via Chartres to Orleans and back to Buc via Etampes. On the 28th he travelled to Saint Aubin-sur-Mer, where he stopped for the night, returning to Buc on the following morning.

A French contemporary states that M. Pégoud has made 5,283 loops and has taken 845 passengers for inverted flights.

Germany.

On June 28th Dr. Ederling and a passenger travelled from Bitterfeld to Dresden in a balloon, taking five hours for the journey. During this time they are said to have attained an altitude of 29,000 ft.

The German Crown Prince and Crown Princess were present at Danzig to witness the finish of the Eastern Provinces Circuit on June 25th. The first home from Königsberg (400 kms.) was Lieut. Steffen (Etrich Doye), followed by Lieut. von Karstadt (Albatros biplane), Lieut. Schaefer (Rumpler-Dove), and the first civilian, Bruno Langer (Albatros biplane). Counting in the two men hors concours, 21 aviators finished the event. One of the officers, Lieut. Funk, had the misfortune to collide with a herd of cattle whilst landing at Tilsit, and smashed his biplane. On June 26th the men took part in a reconnaissance to Graudenz and back; Lieut. von Schaefer was sent off first at 6.15 a.m. Von Karstadt was first home at 8.45 a.m. At the prize distribution the Crown Prince's prize for the fastest time on all the stages was won by G. Hans (L.V.G. bi-

plane) in 10 hrs. 24 mins., the first four places being won by this type of machine, as Laitsch was second in a net flying-time of 10 hrs. 44 mins. Lieuts. von Freyberg and Engwer dead-headed in 10 hrs. 46 mins. The Emperor's trophy for the best of the military aviators went to Lieut. von Freyberg, that presented by the City of Posen to Lieut. Engwer. The whole event was a decided success.

The sum of 50,000 marks set apart by the National Aviation Fund for altitude and duration records has already been depleted by a full half, as Bassor received 10,000, Landmann, Hirth and von Loessl each claiming 5,000 for their recent performances.

According to the newspapers, the Parseval works at Bitterfeld are employed in the construction of two dirigibles, one for the Panama Exhibition and the other for Somaliland. The airship for San Francisco, to be delivered next January, has seating capacity for 25 passengers, a length of 110 metres, and an average speed of 70 kms. per hour. The second airship, intended for the British Government, will be in charge of Commander Boothby, R.N., and resembles the English Naval Dirigible No. 4 in the main, the gun-platforms, however, being armoured as a protection against stray bullets. The crew is to consist of two officers and nine men, operating two quick-firing guns; a wireless plant will also be fitted.--B.

On the night of June 30th Herr Max Schüller, carrying a passenger on a D.F.W. biplane, left Johannisthal and flew without a stop south-east till he reached Egri-Palanka on the Turko-Bulgarian frontier, where he was brought down for want of petrol. The distance is about 1,000 miles.

It is worthy of note that the Mercédès racing cars driven by Herren Lautenschlager, Wagner (the old Hanriot pilot), and Salzer, which finished 1st, 2nd, and 3rd in the French Grand Prix, were all propelled by Mercédès aero-engines.

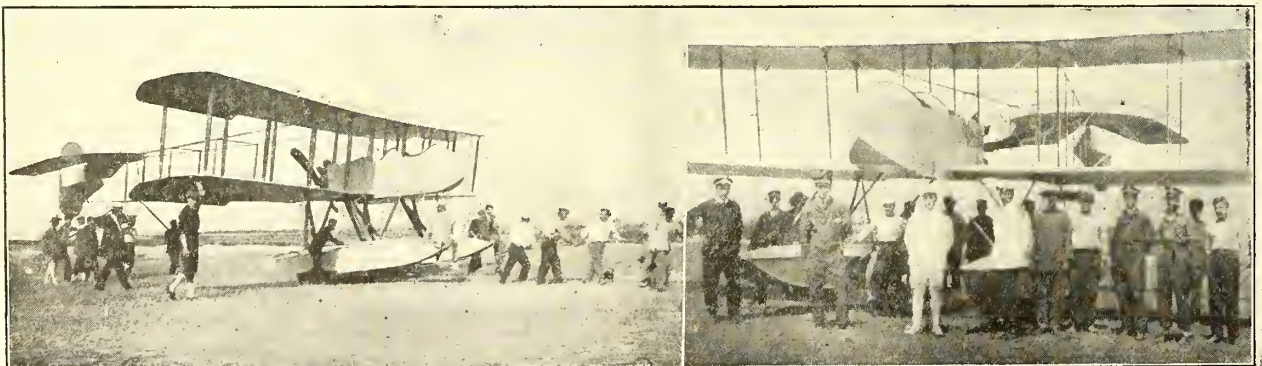
Russia.

On July 2nd Rassi Peredkof, carrying his mechanic as passenger, flew from Kief to Odessa in 4 hours.

Two years ago an expedition organised by the Russian Minister of Marine left Archangel to explore the Far North, under the command of Lieut. Siedow. During 1913 they ran short of coal and dispatched a vessel to Russia to ask for help. A relief expedition is to start immediately under Capt. Islamow, and part of the outfit will be a Maurice Farman biplane, to be piloted by Lieut. Nagousky, chief of the military school at Petersburg. The machine is being fitted with a wheel chassis for land, a float chassis for water, and a ski chassis for ice-work. It is hoped by the use of this machine to discover Siedow's party with greater ease.

On June 29th Sikorsky, at Petersburg, carrying four passengers, flew 407 miles without landing, beating the world's record. Next day he flew across country with the same passengers in a bad wind and covered 318 miles in 6½ hours.

On June 30th M. Pischoff, having received important orders from the Russian Government, and desiring to obtain the necessary wood, flew his Terestchenko monoplane (60-h.p. Le Rhone) from Tschernowooé to Kiew, where he made the neces-



The Sopwith Seaplane (School Type), 100-h.p. Anzani, in Greece. On the right, Lieut. C. P. Pizey, R.G.N. (in white) is seen with Lieut. Moraitinis (in a white tunic) and his four British warrant-officer mechanics.

sary arrangements, returning later. The whole journey was made over forest land, and the total distance was 400 miles, which indicates some faith on the part of the aviator in his motor.

Austria.

June 25th was the second flying day of the meeting at Vienna-Aspern. The weather was very unfavourable. In the 8,600 metre race the six competitors were started in threes. Garros won the first heat in 4 mins. 32 secs., and Krieger the second in 4 mins. 28 secs., the best time of the day. Gilbert was first in the climbing contest, reaching 1,000 metres in 3 mins.

Another interesting event was the shortest run-off to attain an elevation of 10 metres. Poulet, on his Caudron, only took a horizontal stretch of 30 metres. Gilbert needed 40, and all the other competitors were far longer. This event led to certain breakages, all the pilots concerned escaping scot-free.

Hirth (Albatros) won the altitude prize with 3,920 metres, carrying two passengers; Audemars, alone, reached 3,130 metres. Von Loessl, also carrying two passengers, actually ascended to 4,200 metres, but as he landed after the close of the meeting he was out of competition. Nevertheless, he beat Capt. von Blaschke's world's record for the same number of passengers by 620 metres. The duration contest ended in a victory for Stiploschek (Jeannin) with 4 hrs. 20 mins., Hirth being second with 4 hrs. 7 mins. 49 secs.

On the third day, June 27th, three new altitude records were put up in the contest for the trophy presented by the Office of Public Works. Lieut. Bier, who is well known in England, rose to 6,170 metres on a Lloyd biplane with a passenger, Loessl (Albatros biplane), carrying three passengers, achieved 4,770 metres, and Hirth, two passengers, 4,900 metres, also on an Albatros, but with a Benz motor, whilst both Bier's and Loessl's machines had Hiero motors.

Landing within a marked square was not very successful, as Chanteloup alone managed the feat. Loessl beat Garros in the race from Aspern to Wiener-Neustadt and back in 40 mins. 8 secs. Hirth's record was surpassed on the following day by Lieut. Bier, who with two passengers climbed up to 5,440 metres. Shadows were cast over the meeting by the two disasters that occurred during the week, the catastrophe at Fischamend and the ruthless assassination of the Austrian heir to the throne and his consort. The financial result was not satisfactory, owing to the small public attendance.—B.

The race to Vienna-Neustadt resulted thus: (1) Sparmann, 4,000 kroners; (2) Konschel, 2,500 kroners; (3) Wittmann. Time for the 100 kilometres, 53 mins. 40 1/5 secs. The starting competition: (1) Konschel, 2,000 kroners; (2) Sparmann, 1,500 kroners. In the speed trial, Aspern-Poydorf-Aspern, as von Loessl declined to start in the final against Garros, Gilbert

and Prévost, Hirth, as next qualified for the event, was nominated in his stead. On his refusing likewise, it was agreed to divide the first three prizes, totalling 9,000 kroners, between the Frenchmen

Italy.

Dal Mistro, though as regards looping singularly unfortunate, is also fortunate in his misfortunes. Now that he is free from legal worries and able to exhibit, a trivial disaster at the Zappoli course at Bologna has put him hors de combat again without any personal injuries luckily.

I understand that things in Florence are again looking up, and that a festive Sunday meeting to inaugurate their aerodrome was to be held on 5th inst.

Another periodical called "Aer" has now got to its fourth number, which speaks more hopefully for the movement. Its subscribers are mostly Service aviators "et hoc genus omne," hence the paper is uncommonly well brought out.—T. S. H.

Switzerland.

Last week M. Bider, who had been giving exhibitions at Mulhause on his Aviatik biplane, flew to Berne without incident.

Norway.

The former naval officer, Tryggve Gran, who took part in Capt. Scott's South Pole expedition, will soon try to fly from Scotland to Norway, covering the 300 miles by night. In an interview, Tryggve Gran has told that he will start on an ordinary 80-h.p. Gnome-Blériot monoplane from Peterhead, and that he hopes to reach the coast of Norway between Stavanger and Farsund, or the wind may throw him to Denmark. He will carry spirit for 7 hours' flight, and the tour is likely to last 5 to 6 hours. The Blériot monoplane will be equipped with air-cushions.—H.

Sweden.

Having now recovered from his accident, Capt. Sundstedt will soon start from Paris in his Henri Farman in his attempt to fly to Stockholm.

Dr. Thulin has dispatched an appeal to the Swedish people to erect landing-grounds for effective and safe military flying and private tourist flying. He asks for grounds of the dimensions 300 by 300 metres.—H.

Denmark.

The well-known Danish millionaire, Ole Olsen, who has earned his money on cinema pictures, will defray the expenses of a North Pole expedition which is to be equipped with aeroplanes.—H.



Photographed at Buc by Mr. Oswald Watt.

THREE OLD FRIENDS AND TWO NEW ONES.—Left to right: M. Prier, once of the Bristol Co., who has now become a manufacturer; M. Tétard, also of the Bristol Co., now pilot of the Bathiat Sanchez Co., who has been flying the Doutré stabiliser in the Security Competition; Lieut.-Aviator Giovanni Sabelli, of the Bulgarian Army, who is now testing Blériot tandem two-seaters for Bulgaria. On the extreme right M. Garaix tells Mr. Samuel Pierce, the American Blériot pilot, about his records on the Paul Schmitt biplane.

The London-Paris-London Race.

Saturday next, weather permitting, will see the first air race from London to Paris and back. The mere fact of such a race being a practical proposition shows the advances which are being made in aviation. The greatest possible credit is due to the London Aerodrome authorities, who first thought of organising such a race, and to the International Correspondence Schools and the Royal Aero Club who made it a financial possibility.

The following alterations have been made to the regulations:—

Order of Starting.—Competitors will be started in the order of their respective handicap times. The first competitor will start at 6.30 a.m., and other competitors at intervals of not less than 10 minutes.

Arrival in Paris.—The compulsory stop at the Buc Aerodrome has been extended to two hours.

The following are the officials at Hendon:—

Stewards.—Col. H. C. L. Holden, C.B., F.R.S., Major F. Lindsay Lloyd.

Handicappers.—Mr. J. H. Ledeboer, Mr. A. G. Reynolds, Marquis J. de Lareinty Tholozan.

Timekeeper.—Mr. A. G. Reynolds. **Clerk of the Course.**—Mr. J. H. Ledeboer.

The prizes are as follows:—

Fastest Time.—1st prize, £500. Presented by the International Correspondence Schools.

Handicap.—1st prize, £300, presented by the Royal Aero Club. 2nd prize, £150, presented by the International Correspondence Schools, 3rd prize, £50, presented by the International Correspondence Schools.

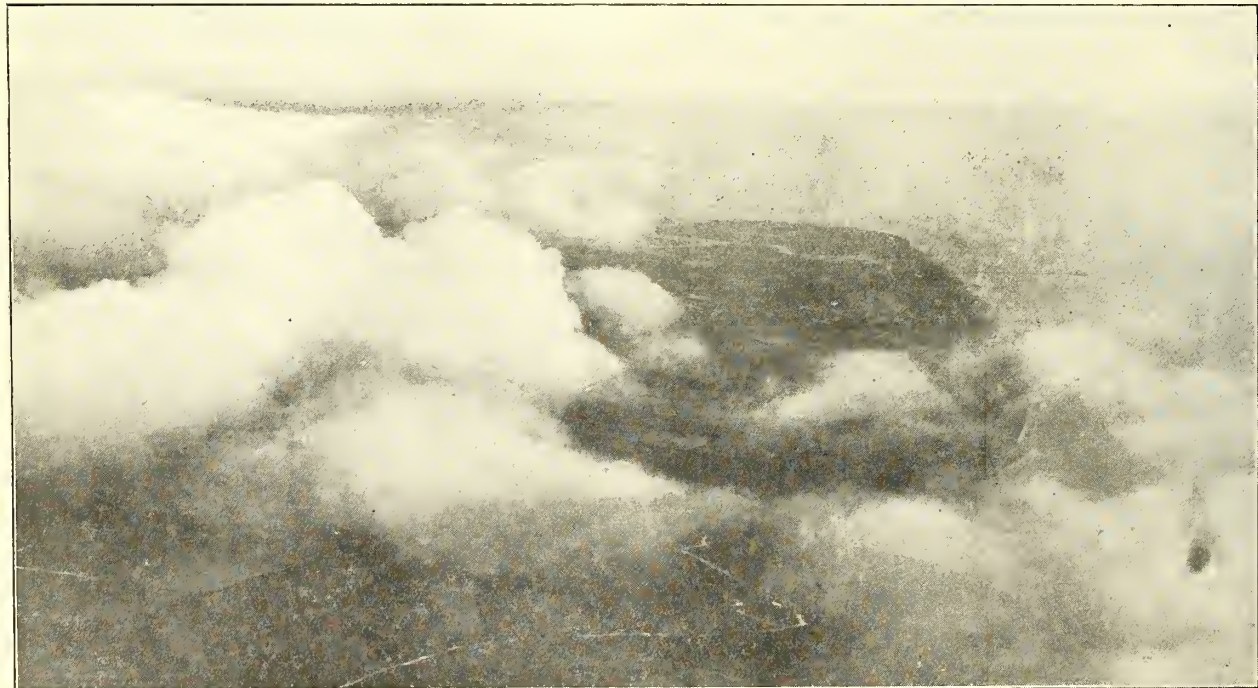
The following are the entries:—

1. Lord Carbery, Bristol bi. or Morane mono. (80 Le Rhone).
2. R. Garros, Morane mono. (80 Le Rhone)
3. A. Piquet, Morane mono. (80 Le Rhone).
4. Pierre Dacourt, Clement-Bayard mono. (80 Gnome).
5. A. Parmelin, Deperdussin mono. (80 monosoupape Gnome).
6. Walter L. Brock, Morane mono. (80 Gnome).
7. Louis Noel, Morane mono. (80 Gnome)
8. R. H. Carr, Morane mono. (80 Gnome).



9. A. Malard, Nieuport mono. (100 monosoupape Gnome).
10. R. R. Skene, Martinsyde mono. (120 Austro-Daimler).
11. Maxime Lenoir, Ponnier mono. (80 Gnome).
12. Eugene Renaux, Maurice Farman bi. (120 Renault).
13. Pierre Verrier, Farman bi.
14. Thomas Elder Hearn, Blériot mono. (80 Gnome).

It will be noted that there are only four British pilots, and one American, the rest being French.



Walton-on-the-Naze, from a seaplane above the clouds at 3,000 feet.

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KINDLY MENTION "THE AEROPANE" WHEN CORRESPONDING WITH ADVERTISERS.

The Death of M. Legagneux.

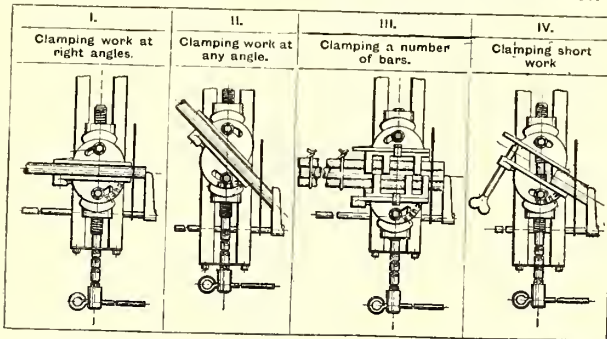
On July 6th M. Georges Legagneux was killed at Saumur while attempting to perform a double loop. He will be remembered for his very long and versatile career as a flier, which dates back to the beginning of aviation. He was originally a mechanic with the late Capt. Ferber, doing rolling work on the latter's machines somewhere in 1907. He did much cross-country flying on the earliest Farman box-kites, almost always accompanied by his inseparable companion, M. Martinet. About 1911 he and Martinet started an aerodrome at Corbeaulieu, near Compiègne, which was a most amusing place, if not a commercial success. Later he took to Blériot and Nieuport monoplanes, breaking the world's height record on different occasions on machines of both makes. More recently he has been flying a Morane.

Legagneux was one of those happy people who never grow up. He was always cheerful, and ever ready for any boyish escapade which suggested itself. His sense of humour was of the keenest, and his personal popularity immense. In him the world has lost one of its really great fliers.

Accounts of his accident agree that after doing two consecutive loops the machine dived into the Loire, evidently at a shallow place, for Legagneux was alive when got out of the machine some twenty minutes later. A later account says that the doctors at Saumur believe that the real cause of death, and of the dive, was that he broke his neck in the air. It will be recollected that the late Mr. Hamel was rendered deaf for a long time, and, momentarily, almost unconscious, by the shock of being thrown hard into his shoulder-straps, owing to his Morane jerking over onto its back after a tail-slide following an uncompleted loop, and it seems quite likely that such a shock might dislocate a man's neck. Loopers should be warned by this experience.

A Useful Machine Tool.

The Fortuna Machine Co., Ltd., of Leicester, have introduced a new type of power-driven hack saw which has cer-



tain distinctly useful features. It is provided with a universal vice which will hold material of any size up to 6 inches by 6 inches, and can be quickly and accurately adjusted to any angle required without the use of squares or protractors.

One of the illustrations published by the firm shows clearly the range of this adjustability, and another a complete machine arranged for belt drive. The prices are extremely moderate and the tool should find many applications in aeroplane works.

Seaplane Safeguards.

A number of the pilots in the forthcoming London-Paris race will wear Boddy life-saving jackets. These jackets have now been considerably reduced in bulk and do not in any way interfere with the freedom of action of the wearer, though they will still keep him afloat and right side up indefinitely. Incidentally the padded front should be a valuable buffer in case of a bad landing throwing the pilot forward into the front of the machine. This point is worth noting, as a severe blow on the chest is likely to inflict grave internal injuries. Enquiries addressed to Mr. Boddy at this office will be forwarded.

The Vickers Exhibit at Shepherd's Bush.

Of the many interesting exhibits at the "Pink City" this year, one of the most important is that of Vickers Ltd. Special attention may be called to the models of the latest super-Dreadnoughts. These give in some ways a better idea of the complexity of the modern battleship than can a visit on board a real one. Amongst the other shipping models, the self-docking floating dock is specially interesting; it shows how readily even a gigantic ironclad (the Brazilian "Sao Paulo") can be lifted clean out of the water. Models of men-o'-war built for other foreign Governments, notably the Russian and Japanese, are good illustrations of the world-wide business connections of the firm. A submarine with submerged displacement of over 1,000 tons is another example of progress in this department.

The very latest things in automatic guns, shells and other warlike material are worthy of attention. Examples of metal work not only of steel but of various alloys are very prominent. Of these latter the new "Duralumin" is perhaps the most notable. For parts of airships and aeroplanes, for making cooking utensils, etc., its uses seem endless and its merits are acknowledged. Its extraordinary strength and lightness (with a specific gravity of about one-third of steel), and its imperviousness to sea-water, create for it a great demand.

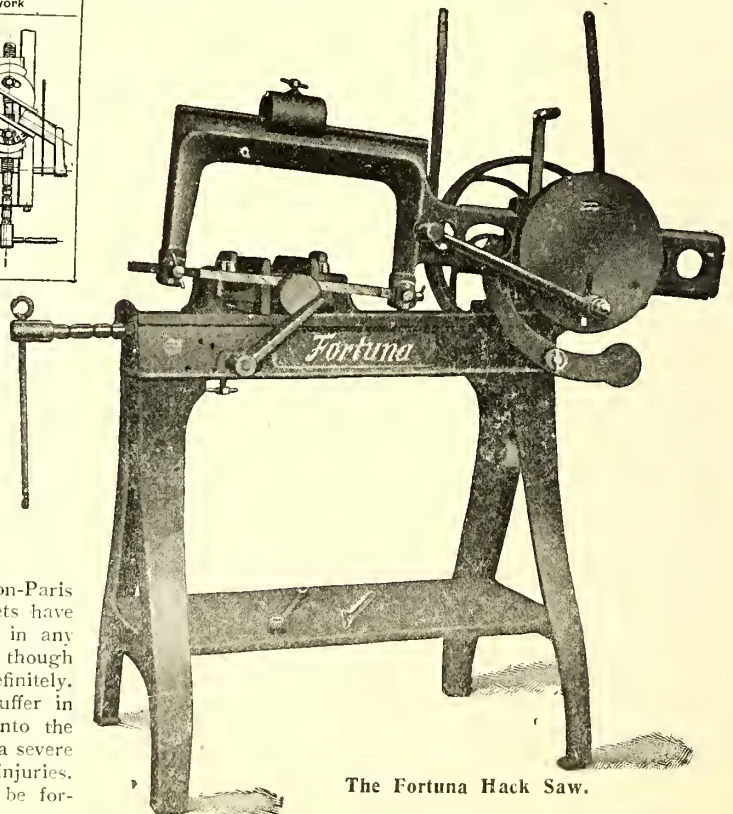
"Timken" roller-bearing axles and "Timken" taper roller-bearings are shown.

A New Material.

Miralite, Ltd., of 52, Gracechurch Street, E.C., have produced a new aluminium alloy which is claimed not to suffer corrosion from salt water or spray. Miralite gives sound clean castings, can be rolled, drawn, spun, machined easily, and is said not to crystallise or become brittle under vibration. It can be welded and is obtainable either in ingots, sheets, bars, tubes or wire.

Miralite has a specific gravity practically identical with aluminium and is very tough. It certainly stands bending, straightening and rebending in a remarkable way.

The tensile strength of cast miralite is from 12 to 14 tons per square inch, which can be increased by rolling or drawing to about 18 tons per square inch.



The Fortuna Hack Saw.

The Week's Work.

Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Brooklands ..	Good	Fair	Fair	Windy	Rain Wind Rain	Windy	Rain
Calshot ...	Fine	Fine	Fine	Dull	Windy	Fine	Rain
Eastbourne ...	Windy	Calm	Gusty	Windy	Windy	Calm	Calm
Eastchurch ...	Fine	Fine	Fine	Fine	Fair	Fine	Fine
Hendon ...	Fair	Windy	Windy	Windy	Windy	Windy	Rain
Waterloo ...							
(Liverpool) ...	Wind	Wind	Fair	Stormy	Stormy	Fair	Rain

Flying at Hendon.

On Thursday the usual "early closing" display took place. Mr. Birchenough and M. Noel took passengers on the Maurice Farman, Messrs. Carr and Barrs flew the Blériot, Mr. Lillywhite flew the G.-W. biplane. M. Verrier took passengers on the Aircraft Co.'s Maurice Farman, and Mr. Hall was out.

The weather on Saturday, when "Ladies' Day" was celebrated, was ideal, and the members of the Women's Aerial League had plenty of flying to entertain them. M. Louis Noel was first out on the G.-W. Maurice Farman, and gave a very impressive display of switch-backing and banking. Mr. Carr made a very high flight on the Morane, and Mr. Lillywhite showed his skill on the Blériot. Mr. Howarth also flew a G.-W. biplane.

The cross-country race to Bittacy Hill and back was quite interesting, as the rules decreed that each pilot should carry a feminine passenger. Mr. Lillywhite was the first to start on the twin-ruddered biplane. His passenger was not visible, but it is just possible he carried her "en miniature" round his neck. Mr. Birchenough flew the G.-W. Maurice Farman, M. Verrier the Aircraft Co.'s Maurice Farman, M. Noel the 80-h.p. Blériot, and Mr. Carr the Morane. The air was somewhat bumpy, and Mr. Lillywhite had great difficulty in keeping his machine up, apparently scraping the trees all the way. He hung on to his course all right, and at first looked like winning, but Mr. Carr, who was flying equally well on the Morane, passed him in the finishing straight, and won by a couple of seconds, M. Noel being third.

During the afternoon Mr. J. L. Hall made several flights on his Avro, on one occasion descending from several thousand feet in a magnificent spiral. Mr. Bjorklund handled his 50-h.p. well, making short cross-country trips. After the race Mr. Carr looped on the Grahame-White tractor biplane. The ladies had a field day with the passenger flights, the mere men hardly getting a look-in anywhere.

In spite of the steady drizzle a good crowd assembled on Sunday and several passengers were carried. Mr. Lillywhite flew the box-kite and the Blériot. Mr. Carr flew the Morane, and M. Noel the M. Farman. Mr. Gates and Mr. Howarth, and a debutant, Mr. F. D. Dunne, took up the G.-W. biplane in turn. Mr. Barrs also flew the Blériot. During the afternoon Mr. Carr gave a demonstration of looping.

Sunday at Brooklands.

On Sunday before lunch Mr. Hucks flew over from Hurlingham on a new looping machine, returning by car to fetch a second looper. During the afternoon Mr. Hawker made a flight on a Sopwith "Scout," during which Mr. Hucks duly arrived on his second machine.

After an interval of showers, Mr. Hucks ascended and gave a very fine exhibition of looping and upside down flying, after which Mr. Skene on the Martinsyde, Mr. Dukinfield-Jones on the D.F.W., and Mr. Hawker on a Sopwith Scout flew.

Flying at Hurlingham.

On Saturday last Mr. Hucks flew before the King and Queen and the Prince of Wales at Hurlingham. It was originally intended to use a new looping machine for this demonstration. This arrived at Hendon at 4 a.m. on Saturday morning. At 11 o'clock Mr. Hucks tried it out but found it not to his liking. His other looper was in a truck at Weybridge. This was hurriedly detained and assembled at Brooklands, and Mr. Hucks flew it from there to Hurlingham, arriving at 4.30 p.m. After polo was over Mr. Hucks rose in front of the Royal Pavilion and gave a fine display of looping.

On Saturday next Mr. Hucks starts a week's engagement at Scarborough. Here he will loop twice daily over the sea-

front. This is a brilliant notion of the Scarborough authorities to attract visitors a week or two earlier than usual, and it deserves to be successful. The idea of watching an aviator's antics whilst lying on one's back on the sands is quite nice. It gets over the "crick in the neck" trouble very neatly.

Flying at Barnsley.

Last Friday, Saturday, and Sunday, Mr. Manton, of the B. C. Hucks Company, demonstrated at Queen's Ground, Barnsley. Mr. Manton says he has never before had such trying conditions to contend with. The ground itself was on a hill and it was also surrounded with hills and valleys, to say nothing of numerous works' chimneys belching smoke and sulphur fumes, so that there was no peace for the poor pilot under 2,000 feet. In spite of everything, however, Mr. Manton duly looped and banked and spiralled each day.

Mr. Manton has a busy week before him. To-day, Wednesday, he flies at South Molton, and on Thursday, Friday and Saturday at Taunton.

Flying at Bognor.

The Anzani-Curtiss flying boat has been out on test two or three days this last week with Mr. Whitehouse as pilot. Work is progressing apace with the Seaplane Circuit machines at Messrs. White and Thompson, Ltd. The hull from Messrs. Williams and Co., of Littlehampton, has arrived and is a fine workmanlike job.—A.B.

Seaplaning at Brighton.

During the visit last week of the 1st Battle Squadron to Brighton, Volk's Seaplane Station was occupied by Mr. F. B. Fowler with his new 80-h.p. Henri Farman machine (built by the Eastbourne Aviation Co., Ltd.), and considering the varying weather the visit was most successful, no less than 14 passengers being carried on the first day. By slight alteration of the tent, it was able to accommodate this machine, which has a span of 56 feet, and the new rail slipway and trolley up and down the beach proved more than successful.

This is the second seaplane the Volk station have housed so far this season. One hopes there will be many more.

Flying at Shoreham.

Preparations for the opening of the Summer Season at the Brighton-Shoreham Aerodrome on Saturday, July 11th, are nearing completion. An entertaining programme has been drawn up, and Shoreham should become one of the most attractive spots on the South Coast.

A feature of the season will be racing round pylons over a course nearly two miles in length. The number of machines to visit the Shoreham Aerodrome during the season has necessitated the erection of six new sheds.

The comfort of the visitors has not been overlooked, and seating accommodation on the lawns is being provided, as are refreshments. A military band is to attend each flying meeting, and a bandstand has been constructed.

Flying at Eastchurch.

On Sunday Mr. McClean made a couple of flights on his Short biplane (70 Gnome), accompanied on each occasion by a lady passenger

School Reports.

Brooklands.—AT VICKERS SCHOOL: Instructors: Messrs. Barnwell, Knight, Elsdon, Webb. Pupils with instr. on machine: Lt Clemson (12), Lt Gillman (7), Capt Kane (2), Lt Haskins (6), Lt Wells (1), Mr. Klingenstein (4). Strts or rolls alone: Lt Gillman (1). 8's or circs alone: Capt Kane (10), Lt Clemson (3), Lt Warrand (5), Lt Gillman (2). Machines in use: Two school biplanes.

AT BRISTOL SCHOOL: Instructors: Messrs. Jullerot, Merriam and Stutt. Pupils with instr on machine: Mr. Godwin (1), Mr. Collins (8), Mr. Treloar (3), Capt Napier (5), Capt Bernard (4), Lt Coles (5), Mr. Rutledge (2), Mr. Adamson (2), Lt Britten (4), Mr. Lucas (2). 8's or circs alone: Mr. Adamson (11), Mr. Treloar (12), Mr. Charlesworth (10), Mr. Godwin (11), Mr. Rutledge (5), Lt Britten (2), Lt Coles (6). Certificates taken: Mr. Charlesworth on July 1st. Machines in use: Three school biplanes.

AT BLÉRIOT SCHOOL.—Instructor: M. Jules Teulade. Pupils doing strts or rolls alone: Messrs. A. Crick (43 mins), H. O'Hagan (24 mins), W. South (8 mins), G. L. Pitt (83 mins), Lt Loot (8 mins), Lt-Com. Fraser (30 mins). 8's or

circles alone: H. O'Hagan (16 mins), W. South (38 mins), Lt Loot (96 mins). Machines in use: 25-h.p., 28-h.p. and 45-h.p. Anzani Blériots. Mr. E. L. Gower flights on 50-h.p. Gnome.

Eastbourne.—At E.A.C. SCHOOL: Instructors: Messrs. Fowler and Morgan. Pupils with instr on machine: Messrs. Bass Sutton, Arnold, Hardstaff and Gwynne. Certificate taken: Mr. Gwynne took second half of his ticket, making a very good vol plane from 350 feet. Machine in use: E.A.C. biplane.

Hendon.—At GRAHAME-WHITE SCHOOL: Instructors: Messrs. Howarth, Birchenough, Lillywhite and Barrs. Pupils with instr on machine: Messrs. Upton, Liu, Wyles, Courtney, Whitehead, Grunning, Toolis (new pupil). Strts or rolls alone: Messrs. Shepherd and Palmer. Machines in use: Grahame-White school machines.

At THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. W. T. Warren and R. Desoutter. Pupils doing strts or rolls alone: Mr. Abbott, Mrs. Buller. Machines in use: Two Caudron biplanes (35 h.p.). Exhibition flights by W. T. Warren, R. Desoutter and Mrs. Buller.

At HALL FLYING SCHOOL.—Instructor: Mr. J. L. Hall. Pupil with instr on machine: Miss Clifford on Avro. Owing to wind no school practice. J. L. Hall out during week on No. 2 Caudron, 50 Avro, passenger and exhibition flights.

At BEATTY SCHOOL: Instructors: Messrs. Baumann and W. Watts. Pupils with instr on machine: Messrs. Allen (39 mins), Chenny (65), Bentley (86), Ruffy (3), Boyesen (17), Hodgson (12), Lts Browning-Paterson (30), Maguire (78), Princess Ludwig of Lowenstein-Wertheim (13). Machines in use: Two Wright biplanes: One Handley Page monoplane.

Liverpool (Waterloo).—At LIVERPOOL AVIATION SCHOOL: Instructor: Mr. H. G. Melly. Pupil doing strts or rolls alone: Mr. Osborn Groves. Machine in use: Blériot mono. On 4th Groves made a nice hop of about 100 yards, but slowed his engine while in the air and made a bad landing.

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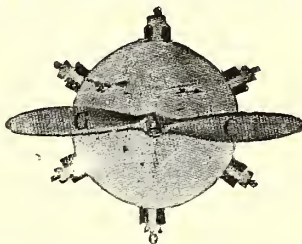
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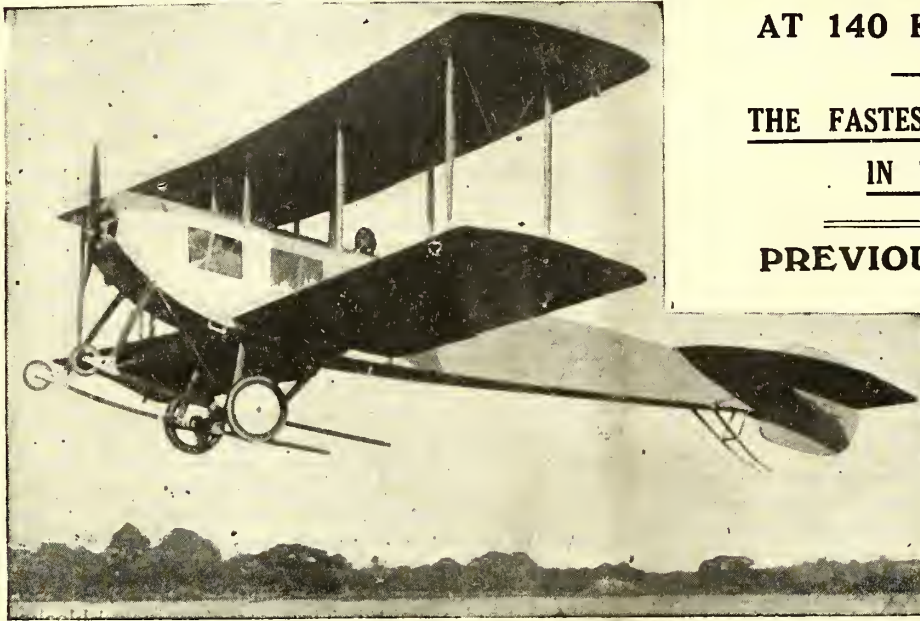
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"THE AEROPLANE," JULY 15TH, 1914.

THE AEROPLANE



Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O. AS A NEWSPAPER.]

WEDNESDAY, JULY 15, 1914.

No. 3

THE TRIPLE CROWN.



Mr. Walter Brock wins the third of the classic races by being the first man to travel by any means from London to Paris and back in the day. Below he is seen just landing. Above he is seen taxiing in surrounded by the aerodrome workers headed by Mr. Grahame-White. In the middle he is seen after the finish standing clad in his Boddy jacket in his Morane monoplane (80-h.p. Gnome, Integral Propeller). His autograph appears on the left.

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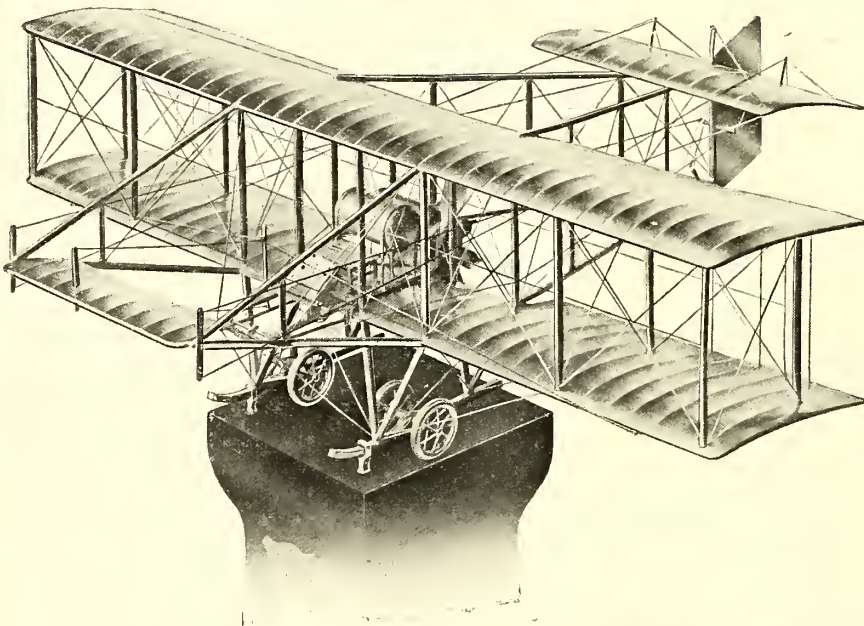
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Coast Defence.

When "The War," so long and skilfully fended off but apparently inevitable some day, does come, naturally our coasts will feel it first, so the matter of coast defence is really the most vital of all things to our national existence. Our Army may be defeated abroad, and we may lose command of the sea, but, despite the British Isles as a whole being in a state of siege, we might hold out for quite a long time so long as our coast defence system remained in something like working order, for although there would soon be an acute state of starvation among our industrial population, the country districts could, if put to it, go far towards feeding the whole population of the nation, at any rate on reduced rations.

Coast defence does not mean merely a few forts along the coast to protect important towns, nor a fleet of submarines to frighten away hostile battleships, but the existence of a fighting force fit to repulse the landing of a hostile army. Assuming that our Expeditionary Force is out of the country when such an invasion is attempted, no such coast defence force exists at present, but in another ten or twenty years, when the rising generation has been educated by means of the Officers' Training Corps, Boy Scouts, Church Lads' Brigades, and so forth to realise that Universal Service is not merely advisable but a necessity to our existence, we shall have a very fairly adequate force of trained fighting men always in the country to deal with any possible invasion.

To the efficient use of this force two things are essential: first, the ability to tell when and where the invading force is going to strike, and, secondly, the ability to transport a defending force to the place where the landing is to be attempted. It was with the idea of acquiring some knowledge on these matters that I paid a hurried visit to part of the East Coast a week or two ago.

In a way, it is satisfactory to note that preparations for the discovery and the announcement of the advent of an invader are much further advanced than are any means for repelling him, for it gives "a fearful man," like myself, a chance of getting out of the way before the invader arrives. The best place to make for under such circumstances is, I think, a chicken farm in the County Mayo. No one has conquered that county yet, simply because it has never been worth conquering, and chickens are a quickly raised crop, equally saleable to whichever side wins. Still, it would perhaps be less disturbing if we had adequate means of defence, as well as an effective warning of the need for it.

Just as every junior lieutenant in command of a torpedo-boat is fully convinced that he is bound direct for Hamburg and the German Fleet every time he is ordered into the North Sea with war-heads on his torpedoes, so every Flight-Lieutenant in the Royal Naval Air Service believes that his first objective in case of war will be Kiel lock gates, provided, of course, that we then possess long-distance aeroplanes as good as the Germans'. At present we have several aeroplanes which are better fliers than any German product yet seen in this country, but the fact remains that the longest distance but one flown across British soil was covered on a German machine. Which is not consoling under the circumstances.

Who is the Enemy?

There are, however, those who believe that Germany is not our enemy. There may be a war with Germany, but it is not likely to produce a great invasion of this country, for Germany will have her hands far too full with her neighbours on land. It is much more likely that we shall ultimately find ourselves

in alliance with Germany, Austria, France, and Italy against the Slav race. The great racial waves always roll from East to West. The Latin race is a spent force. The Teutonic race is at the crest of its wave now in Germany and England simultaneously. It is the turn of the Slav next. Some day soon there will arise a real Slavonic Cæsar, not a semi-German, or a Bourbon run to seed like the Bulgarians' pinchbeck Czar, but a true Slav who will draw together the Russians, the Balkan States, and the Slavonic provinces of what is now the Austro-Hungarian Empire—an empire which will fall to pieces the sooner for the assassination two weeks ago of the strong man who might have held it together when the old and weary Emperor lays down his burden. When the Czar of all the Slavs arrives, then will come our time of trial.

In all human probability we shall all be dead and buried before the great invasion takes place, and it is obvious that the young Eastern races, unsoftened by civilisation, must conquer in the end, so, perhaps, it seems foolish to worry about the troubles of posterity, on the good old principle that posterity has done nothing for us. Still, some of us are foolish enough to believe that these silly little islands may be kept free from foreign invasion, except by peaceful penetration by German waiters, Polish pianists, and Russian slop-clothes makers in the East End. So, on the principle that prevention is better than cure, our coast defences really are worth considering. As to how an invasion may take place, whether it be of German or Slavonic origin, I recommend everyone to read that great book, "The Riddle of the Sands." Not only is it a fine yarn, simply as a yarn, but it gives one furiously to think as to what may easily happen if we do not keep awake.

Supposing that we do in due course produce an army adequate to repulse any possible invasion, the transport of that army to any given point on the East Coast is a comparatively simple matter. True we have not quite the net-work of strategic railways which Germany has along the Frisian coast, and along the Dutch, Belgian, and French frontiers, but we have quite a wonderful system of roads, main trunk roads parallel to the coast, roads across country to the centre of England, and also by-roads which reach the water's edge every mile or two. Fortunately, we happen also to deserve the epithet applied to Dublin many years ago by a jarvey who, apropos another kind of vehicle, the jaunting-car to wit, described it as "the cardrivingest place in the World," so by commandeering and overloading sufficient motor-cars and motor-buses we could probably move our troops quicker than any other nation could in its own territory.

In order, then, to concentrate our very mobile troops at precisely the right places at the right times, there is evidently the simple and absolute necessity for a supply of highly efficient air scouts. This seems to indicate the need for a Coast Defence branch of the Naval Air Service which is quite likely to develop into a section distinct from the deep-sea air scouts. Naval aviation is at present so very much in its infancy that it is impossible to dogmatise on the subject, but it may be well to consider some of the debatable points.

Navy or Army?

First of all, is the work of the coast defence air scout a job for the Navy or the Army? Evidently, the scout's work is for the benefit of the Army more than for the Navy, because, presumably, before any hostile force strikes at the coast our Fleet is going to be pretty busy somewhere else—vide "The Riddle of the Sands" referred to before. Hence, all aircraft

capable of operating with a fleet at sea will be with the Fleet and not along the coast. We already possess a few such aeroplanes, and an experimental mother ship is being built for them, but this section of the Naval Air Service is very much in its infancy. At present coast defence work is being developed more rapidly, possibly because it is to-day easier to buy water-planes than seaplanes—I trust the difference is appreciated.

However, I take it that certain coast defence ships, such as the smaller submarines and torpedo boats, and some cruisers, will be left behind when the Fleet goes to sea, and that they will co-operate as far as possible with the coast defence army, so the shore section of the Naval Air Service may work in the same way. Also, the objection to using Army aviators for coast defence work seems to be that the highly trained military air scout who would never be deceived by a gun covered with brushwood, and would spot the most carefully concealed infantry on land, would be literally and figuratively at sea on a naval scouting expedition. He could not be expected to tell the difference between a cruiser and a transport from 5,000 feet, and a convoy of small steamers carrying troops for a dash at the coast might easily be mistaken by him for a destroyer flotilla lying in wait for a battle fleet.

Of course, one could send up Naval observers with military pilots, but if one is going to do that, why not make the whole thing a Naval job right away? Moreover, the Naval pilots from the Coast Defence Stations would all know their own sections of the coast intimately, and would be less likely to come to grief in landing, or get lost. Also, the military pilot would have had no practice in alighting on water, and the big powerful seaplanes would be outside his experience. Incidentally, this is one of the many arguments against the very nearly deceased One and Indivisible Flying Corps.

What is Coast Defence Work?

Now, assuming that coast defence air scouting is going to be a job of work for the Navy, what sort of work does it involve? For deep-sea work we shall ultimately evolve two distinct types. First, the huge flying destroyer of anything over 1,000 h.p., which will cruise with the fleet on her own bottom with wings folded, and possibly with water propellers, and will only fly when really in a hurry. And, second, the small high-speed scout which will be launched by a catapult from a mother ship, or, as I believe, from any ship above the size of a destroyer. Good as our best seaplanes are at getting off six-foot seas in the Channel presumably no one is foolish enough to think they would do much trade in a full Atlantic swell, or in the high breaking seas round the North of Scotland. They might do it once or twice, but they could not keep on doing it. Both these types are still some way away.

In the meantime, we have to develop our Coast Defence Service with what we can get to-day. Even if we had the

two deep-sea types, we might well need different types for coast defence work. For example, though the big cruising seaplane might be required to work out in the middle of the North Sea and send her results ashore by wireless, there would come a time when her observer would have to land and communicate verbally or by letter with the officer commanding troops. This would mean making for a proper harbour such as Sheerness, Harwich, or Grimsby, when the troops might be miles away.

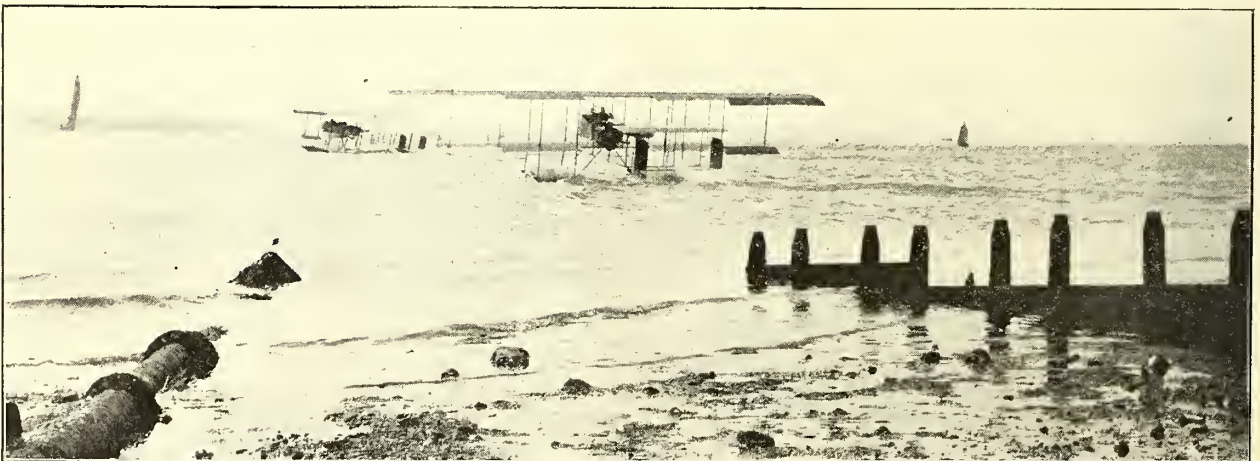
The Amphibian.

A much more useful type for pure coastal work would be an amphibian which could get off a land aerodrome, perhaps a few miles back from the coast, as well as off the sea, and come down safely either on the water, or at any pre-determined point ashore to communicate verbally what could not be sent fully by wireless. Such a machine would be useful in many states of the weather, as, for example, when there was a strong but steady wind accompanied by a heavy sea. Under such circumstances big risks are often taken in getting machines into and off a breaking sea along the coast, when these risks need not be taken at all if the machine could get off land.

And, recollect these risks have to be taken frequently in time of peace so that pilots may have practice in doing what they would have to do in war. The risks to the pilots are not, as a rule, very great—at any rate, no one has been drowned yet (touch wood)—but the number of machines that have been smashed is greater than need have been if enough encouragement had been given to amphibians at the start, and these smashes have cost more than a series of experiments which would have produced the needed amphibian. There are a dozen different ways of designing an amphibian landing carriage, and £1,000 intelligently spent would evolve two or three quite useful types. Note—one does not want to drop one's wheels when once off ground. They may be wanted when landing ashore miles away, and getting off again.

Land-going Sea-scouts.

Yet another question is, are purely land aeroplanes wanted at Naval Air stations? Personally, I should say they are, most decidedly. To begin with, coastal patrols would be better mounted on land machines than seaplanes, for if an engine fails in the course of daily patrol work and the pilot has to come down in the sea he is likely either to be driven ashore and wrecked, or drifted out to sea and lost, whereas with a land machine he is fairly sure to get down without damage, anywhere along the East Coast at any rate. After a week or two of patrol work a pilot is likely to know every field along the coast, and be heartily sick of them all, but if his engine fails he will know exactly where to land and where not to. I take it that daily patrols will be instituted in due course, simply as affording good practice in time of



PUTTING TO SEA.—Squadron-Commander Risk and Flight-Lieutenant Nanson starting on Maurice Farman's (100-h.p. Renaults) for the Test Mobilisation at Spithead.

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peace for what will be necessary in time of war—and, incidentally, they will be useful in working off the superfluous energy of young and enterprising officers who do not happen to be engaged at the moment in seaplane experiments.

Secondly, land machines will be needed both in peace and war to transport pilots or commanding officers rapidly from place to place. Suppose, for example, a couple of extra pilots are wanted in a hurry at Felixstowe, and Calshot can spare them better than any other station. They can do the journey much quicker direct across country than by any other route. Even on a short journey as, for example, from Felixstowe to Grain, or Yarmouth, or Grain to Calshot, much time can be saved by going overland and cutting off corners of land.

Thirdly, a land machine will always be faster than a sea machine of the same type, so long as it has a properly streamlined chassis, and, therefore, simply as a time-saver it justifies its existence. There does not seem to be any need for the Navy to have large, slow land machines, except a certain number for training and experimental purposes, but the class commonly, and, I believe, illegally, known as the "tabloid," seems to give promise of usefulness in both single and two-seater types.

Furthermore, two or three of these high-speed two-seater scouts would be very useful against any misguided foreign aircraft which came from a hostile fleet to annoy coast defence stations. I am still a believer in the very fast two-seater and the sawed-off duck gun as a weapon against slower air-craft.

Future Equipment.

For the purely coast-defence stations the amphibian and the fast land machine seem to be the equipment of the future, though where an air station is associated with other arms—as at Dundee and Harwich with T.B.D. and submarine bases,—and a really good harbour is available, a number of the big deep-sea cruisers may be attached, which can go to sea with the flotillas; though presumably at sea each of these aircraft will be a unit of its flotilla and will only use the air station as a base for repairs and replenishments.

Of course, we are only at the beginning of seaplane work, and the machines we have got are doing very well, but the more I see of it and the conditions under which aeroplanes of all sorts will have to work on active service, the less use I can see in the not far distant future for waterplanes of anything between 50 h.p. and 250 h.p. which are hauled out of sheds and pushed into the water down precarious slipways by the horny hands of bare-legged sailormen. It all seems so silly and clumsy and useless.

The Royal Navy is a good deal ahead of any other navy in the quantity and quality of its seaplanes, for we have the best French as well as British machines, but if our manufacturers take the few hints thrown out here we shall soon be a great deal further ahead, unless the practical German steals a march on us, as he has done in the matter of inherent stability. What we need are big, weather-proof seaplanes which need no shed but will ride at their moorings like any other boat, and we need smaller, handier machines for purely coastal work, say amphibians up to 200 h.p. and fast "scouts" up to 100 h.p.

The East Coast Stations.

As to our existing East Coast stations. Isle of Grain I have only seen at a distance, but it seems excellently situated for the training of pilots in water work, and it is not too far from the mouth of the Thames to be useful for sea scouts. Also it has the advantage of being near Sheerness Dockyard, and the harbour should be good for big seaplanes. As a residence I gather it lacks charm, and it seems far from healthy. There is little sport in the vicinity for officers or men in their spare time, though one hears that duck-shooting from aeroplanes is good fun and useful practice as well.

Felixstowe provides the most eligible residence I have seen so far. The town is not quite spoilt by trippers and the country round about is pleasing. The Air Station itself is well placed strategically and is kept in beautiful order. When I was there the machines, Maurice Farmans with 12-cylinder, 100-h.p. Renaults, and a Henri Farman with a 120-h.p. Gnome, were being overhauled for the Review this week. All are of the latest type with sprung floats, and are obviously maintained in excellent condition. The engines seem to

give more trouble than the aeroplanes, which are said to fly very well indeed.

From a purely practical point of view the chief drawback to the station seems to be that the machines have to be pushed up sloping wooden platforms over a funny little sea-wall, and down a slipway which stops too far above low-water mark, to get them into the river. This, of course, will not matter in the day of amphibians, but, as that day is still some way ahead, part of the sea-wall might be pushed down with advantage, as it does not seem to do any work. Or as an alternative a derrick might be useful, and not very expensive. In the future, owing to its proximity to Harwich, with its submarines and destroyers, Felixstowe seems likely to become a very important station.

Behind the sheds is a landing ground of sorts. Actually it is a small, sandy plain whereon at seasons wild Special Reservists from strange industrial communities gather for training. Consequently it is surrounded by rifle butts and the surface is corrugated by firing points, with resultant aerial and terrestrial bumps to catch the unwary pilot alighting on a land machine. The indigenous pilots know all the bumps by name,—some of them unpublizable,—but the visitor is warned to beware. The O.C. kindly keeps a large white arrow in stock which is laid out, when visitors are expected, to indicate the direction of the wind on the ground and the right place to land, so pilots who are strangers to the district are advised to circle round till the sign is brought out, if it is not already there.

East Coast Headquarters.

At Yarmouth enormous alterations have been made since I was there on manoeuvres last July. Instead of a few tents on the beach there are fine solid sheds in a concreted yard, surrounded by a high, galvanised-iron fence. Both here and at Felixstowe, and I suppose at all the other stations, the sheds are fitted with roller shutters, like those used in shops. These seem to give some trouble, and the uprights between the shutters have to be removed to get the machines out, which wastes time. I cannot understand why sliding doors which run round corners in a train are not fitted, like the Allport doors in the Vickers sheds at Joyce Green. Even the energetic A.B. could scarcely do them much damage, and they are much quicker to handle.

At Yarmouth the machines are Henri Farmans with Gnomes of 120 h.p. and 100 h.p. Also there is an aged Short tractor (100-h.p. Gnome), which has done a vast amount of work, and was then being overhauled prior to some interesting experiments being tried with it. One gathers that the 120-h.p. Farmans with floats do something over 70 m.p.h. and perform—in the hands of some pilots anyhow—much as the 80-h.p. does at Hendon when M. Verrier is in a joyous mood. Eyewitnesses tell me it is a fearsome sight to see a large seaplane standing on a wing-tip, but it is not altogether ill that young pilots with nerve and judgment should do these things occasionally—though not perhaps as a habit—for it is well to find out what a machine really will do when necessary, and it is well to keep in practice, for the ability to dodge suddenly may be very valuable on active service, or even in peace when confronted unexpectedly in a fog or in a cloud by another machine. There is a vast difference between "stunt" flying, or "joy-riding," and serious experimental flying to find out what can be done on any given machine.

Behind the aeroplane sheds are the South Denes, which, when devoid of fishing nets, make a very useful aerodrome, but being "common" land they cannot be enclosed or kept really clear of people, so that need seems to arise for a proper enclosed ground somewhere further inland. The harbour behind the Denes should be large enough to shelter cruising seaplanes comfortably when their wings are folded.

The Coastguard Station.

Recently the Royal Naval Air Service has taken over the old Coastguard Station, right in the middle of the "tripperiest" part of the town. This is now known as the Coast Defence Station, and geographically it is certainly the ideal place from which to command the East Coast Group of air stations, for Yarmouth is practically the Easternmost point of the coastline and therefore the quickest place for scouts out

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in the North Sea to reach if ships are sighted heading south, and yet it is far enough North for the more northerly English stations to keep in touch with it when they are established.

The Coast Defence Station itself forms three sides of a square, the fourth side being only a low wall separating the ground in the middle from the road, and the man, woman or child in the street seems to find much joy in hanging over the wall and gazing at the "intrepid birdmen" inside, what time he, she or it distributes orange-peel on the Navy's gravel. I suggested that as an advertisement for the Air Service all hands should be piped on deck at sunset every evening and that the White Ensign should be hauled down to the accompaniment of drums and bugles, trumpets also and shawms, "and all other kinds of musick," just to give the British taxpayer a run for his money, but the proposition was not received with acclamation. The alternative seems to be to dig a flower-bed parallel to the wall and sow hops in the spring. By the time the trippers arrived in the late summer the hops would be about fifteen feet high and would make a nice green screen behind which the personnel could modestly ensconce themselves.

The men's quarters, formerly occupied by the Coast Guard, are quietly luxurious, every man having a nicely furnished room to himself. The officers also are comfortably housed, though the mess is not as yet in full running order. The decorations are tasteful, but not elaborate. Doubtless in time portraits of Naval notabilities will embellish the walls, and will be duly appreciated,—provided the donors do not leave the mess to pay for their portraits, as an old story states to have

24 Hours in the Air.

On July 10th Herr Reinhold Boehm left the ground at Johannisthal at 5.51 p.m. and flew without a stop till 6.3 p.m. on the following day, thus beating Herr Landmann's record by 2 hrs. 24 mins. The flight was done on the Albatros biplane (75-h.p. Mercédès) on which Landmann's previous record was made.

The machine was a standard Albatros military machine, and carried 132 gallons of petrol (950 lbs.) and 110 lbs. (14 gallons) of oil. Despite this heavy load, Herr Boehm had no difficulty in ascending, and for the first few hours flew slowly round the aerodrome at about 300 ft. After dark he ascended to about 1,000 ft. and left the aerodrome to fly over Berlin and Potsdam for an hour or two, and returned to Johannisthal at midnight. From then on he circled the aerodrome, rising to 7,500 ft.

been the case with a famous picture in the mess of one specialist branch of the Service.

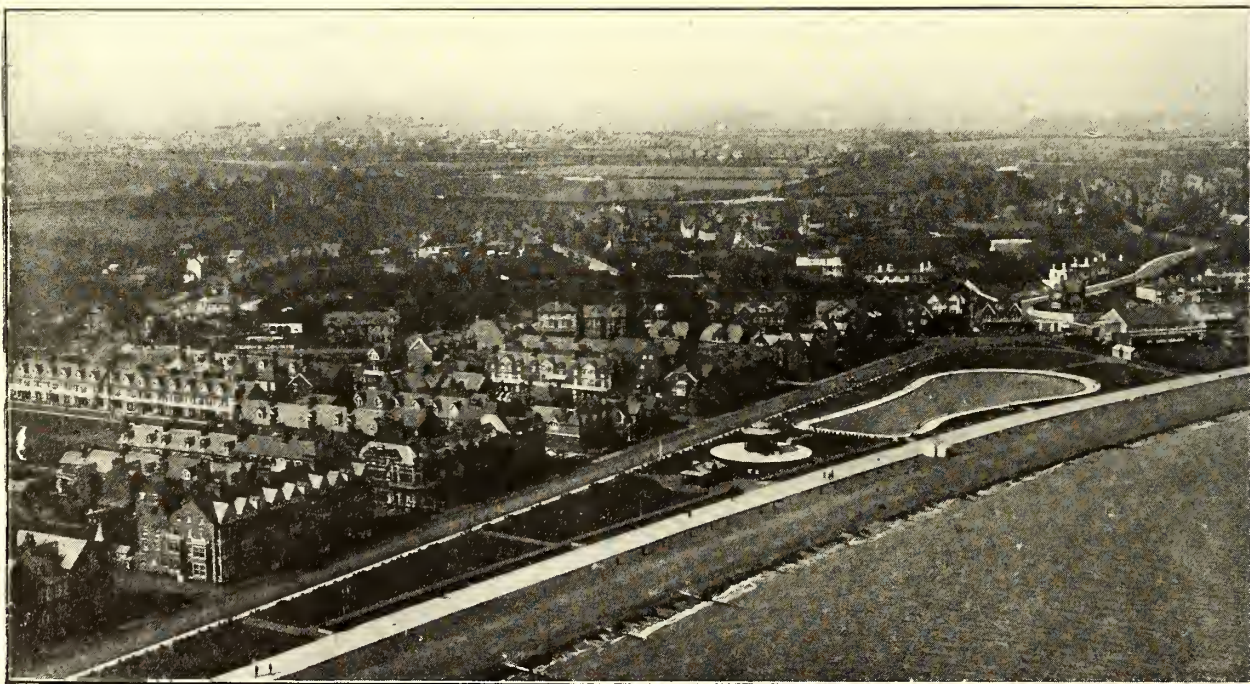
In addition to Coastguard duties, the Coast Defence Station cares for the local lifeboat and life-saving rocket apparatus, and runs a few other minor details of a kindred nature, so no one can complain of monotony or lack of work to do. The Naval Lunatic Asylum, which is located at Yarmouth, has not been associated as yet with the Air Service, so, apparently, despite the opinion some people hold of all aviators and all people hold of some aviators, the official view is that the majority of Naval pilots are still sane.

Taking it all round, the Coast Defence section of the Royal Naval Air Service is a very healthy infant, a very small and juvenile infant it is true, but very promising. The excellent experimental work being done with various types of machines at Calshot should assist materially the rapid development of improved aeroplanes for both deep sea and coast defence work. If due encouragement is given to officers and men at all stations to send in their ideas for further improvements, and if the soundness of those ideas is investigated by practical men, and not merely decided upon off-hand by those who sit in office chairs, still more rapid progress can be made. The Air Department at the Admiralty has done wonderful work in a very short time, and if, when the officers at present forming that department go to sea in due course, those who follow them continue the good work at the same rate, we shall have as good cause ere long to be proud of and confident in the Naval Air Service as any other branch of the Royal Navy.—
C. G. G.

about mid-day to escape the heat eddies. At about the twentieth hour he redescended to about 1,000 ft. At 3 p.m. a storm blew up, but Herr Boehm flew through it, landing eventually apparently fit and fresh, except for very sore hands, although he had done 12 hours' unbroken duty before starting.

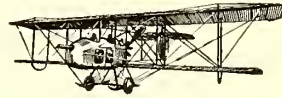
He carried with him a "Thermos" flask of cold milk, chocolate, biscuits, and a book, and whiled away some considerable time in reading. His average speed is computed to have been about 47½ miles per hour and his total distance about 1,350 miles.

Herr Boehm's time was considerably greater than that which should be necessary for the trans-Atlantic flight, and with a following wind of about 20 miles per hour his distance would have equalled that from Newfoundland to Ireland.



Felixstowe from 500 feet, photographed from a seaplane.

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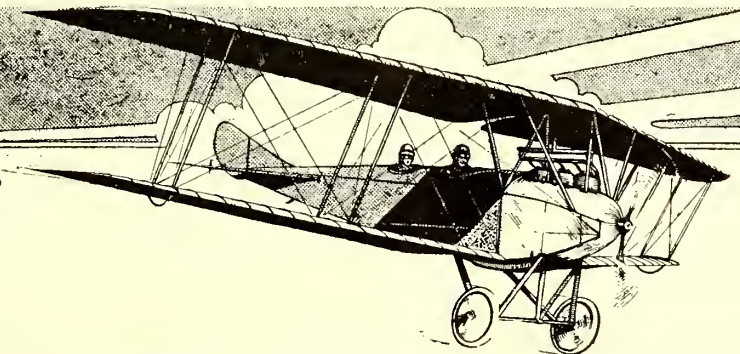


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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Aeroplanes of the Future—III.

BY W. H. SAYERS.

In the first article of this series structural reasons were given for the adoption of double fuselage or double floats taking the place of fuselages when dealing with very large machines.

A consideration of the pros and cons of the flying boat type of machine and the twin float system applied to large machines also leads to the conclusion that twin floats are likely to be found necessary.

Given a machine of a given weight it is necessary that the flotation capacity of the float should be something greater than that weight—approximately twice the weight as a matter of fact—which defines the total volume of the float or floats. Considerations of longitudinal stability on the water establish the necessity for a certain minimum length of float, which length determines the mean cross section of the float or floats.

Single Float Problems.

With a single central float the provision of lateral stability on the water is a fairly simple problem, it being necessary to provide a reasonable metacentric height, and anyone of ordinary intelligence can work out the metacentric height of a machine and float by the aid of Molesworth's Pocket Book of Engineering Formulæ. Practically this comes to providing the float with sufficient beam, and this beam will be found to be quite large for a machine of any size. For example, a tractor biplane of normal design—46 ft. span, 500 sq. ft. surface, 100 h.p., weighing 2,800 lbs. fully loaded, and whose centre of gravity was about 4 ft. 6 in. above the float top, required a float with a beam of over 7 ft. to give it moderate stability on the water. This was insufficient to dispense with balancer floats or even to keep these out of the water under the propeller torque when the machine was accelerating.

The length of the float and its beam being determined by these requirements and its volume by the flotation capacity necessary, the mean depth of the float is also determined. As the flotation capacity is twice the weight of the machine, half this mean depth is freeboard when floating, and practically all of it when the float is planing.

Now a certain amount of freeboard is necessary for a float, as otherwise it has a great tendency to "dig in" to the water, and the greater the freeboard the less chance of this occurring. With a single float it will usually be necessary to build up a superstructure over the float proper, which means a certain amount of unnecessary weight and head resistance.

Limitations of the Single Float.

With small machines and for smooth water one may dispense with lateral stability in the main float and rely on balancer floats at the wing tips. Actually this arrangement is not satisfactory even under these ideal circumstances—but for large machines and for rough water it becomes hopeless. Certain machines of the flying-boat type certainly have no very great margin of stability in the hull itself, and yet appear to perform passably. This is really due to the fact that the lower planes are very close to the water and a very slight roll suffices to bring the balancer floats into play. The machine has not the time to acquire a good swing, and consequently the shock of the balancers hitting the water is small.

But really large machines will require to stand up to and get off seas which would wash clean over planes close to the water, and as soon as the distance that the machine has to roll to bring the balancers into play becomes large, the shock of the wing floats hitting the water becomes great, and the wings have to transmit stresses due to shock loading which will be very much greater than if the same load was applied gradually.

Twin Float Advantages.

With twin floats the length is dictated by the same considerations as in the single float machine, but lateral stability is secured by placing the floats sufficiently far apart, and the actual beam of each float is immaterial. The designer may therefore dispose of the necessary cross section of float as seems best to him, and by the use of relatively narrow floats spaced

far apart may secure the required stability and a reasonable freeboard on each float.

A deep and narrow float can for the same weight be built stiffer and stronger than a wide shallow one as it admits of deeper girders, and for a given volume will probably have a lower head resistance.

Thus the twin float, or a double boat arrangement, is as desirable from the point of view of seaworthiness as is the double fuselage arrangement for structural reasons.

Probable Trend of Design.

Assuming that a hypothetical designer of a large machine has satisfied himself that a twin float machine with a motor in each float is the correct way of attacking the problem, what variety of machine will he eventually produce?

He may build an ordinary tailed machine with open tail booms behind the main planes. But open tail booms in large sizes will require either very heavy members or very short boxes and a huge amount of bracing to render them reasonably strong and rigid. As an alternative a covered-in structure similar to an ordinary fuselage might be built out from the end of each float to carry the tail, or the hull itself prolonged backwards for this purpose, as in present-day flying-boats. Either of these methods might show a saving in the combined effects of weight and head resistance over open tail-booms, but the presence of a tail at all means the provision of a special structure to carry it, which serves no other useful purpose.

"Canard" Seaplanes.

Now to avoid turning a machine over onto its nose when taxiing on the water or when landing, it is necessary that the floats should project considerably ahead of the centre of gravity of the machine. Consequently most of those who have gone into the question of designing seaplanes must at one time or another have considered the question of using this projection of the floats to carry the stabilising surfaces and doing away with tail booms altogether.

Unfortunately, in spite of the excellence of the tailless, front elevator, or "canard" type, as far as longitudinal stability is concerned, all machines so far built on these lines have been disastrously instable directionally, and have all shown a strong tendency to spin and nose-dive.

This is really because the centre of side pressure due to a wind at a small angle on an elongated body is always very far forward, and consequently in a canard type of machine the centre of side pressure on the structure used to carry the elevator is always well forward, while the centre of gravity of the whole machine is far back, and it is difficult in such a machine to arrange a rudder far behind the centre of gravity of the machine, and consequently most such machines have lacked rudder control, a fact obscured by the coincidence that a machine with a forward centre of side pressure turns quickly and easily under that side pressure as soon as the rudder has just started a turn.

How to Make the "Canard" Stable.

Now that these facts are known it should be possible to design a really stable "canard" type machine. There is some considerable reason to expect that to obtain pure lateral stability in very large machines much larger dihedral angles than have hitherto been used will become necessary, and the use of a large dihedral on a "canard" type is one simple way of providing side area aft.

Large dihedrals undoubtedly lead to a certain loss of efficiency, but this loss is not by any means as great as used to be imagined. At 15 degrees the loss of lift will be about 5 per cent. Vertical side panels between the rear planes can also be employed if necessary to secure directional stability.

There is an alternative method of assisting the directional stability of this type of machine, and that is to move the centre of gravity forward. This means increasing the area of the front planes relatively to the rear ones. Such "canard"

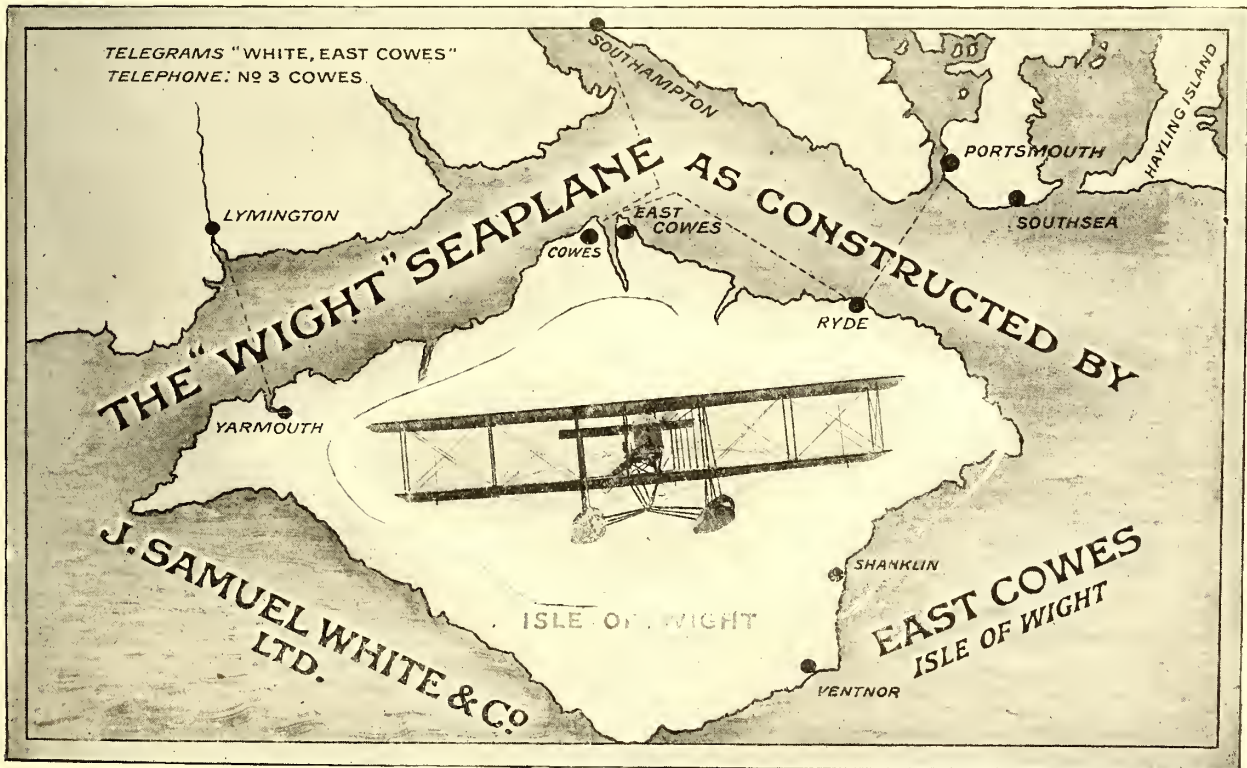
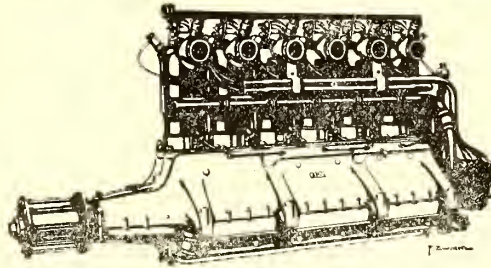
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machines as already have been built have had relatively small front planes, and in spite of the heavy loading per square foot on these front planes the centre of total lift and, therefore, the centre of gravity of the whole machine has always been fairly near the centre of lift of the rear planes. Increasing the area of the leading plane in this type obviously brings the centre of lift farther forward, and the centre of gravity must follow, until, with a tandem machine with equal leading and trailing surfaces, the centre of gravity must be closer to the leading surface than to the rear one, since the front surface must be the more heavily loaded to secure longitudinal stability.

By a combination of these expedients one would produce a machine with a leading surface one-half or perhaps one-third of the surface of the trailing planes, with no dihedral, or very little, on the front planes, and a large one on the rear planes, possibly with the addition of vertical panels between the latter. The centre of gravity of the whole would be sufficiently far

forward to render a rudder immediately behind the rear planes effective, or alternatively a smaller forward rudder on the nose could be used, giving a longer radius from the centre of gravity to the centre of rudder pressure still. Such a forward rudder would in all probability be ineffective at low speeds on the water—as, indeed, are most air rudders under these conditions.

However, it can scarcely be expected that the present crude method of manœuvring seaplanes at low speeds on the water will be used for large machines in the future. Water rudders steer much better at low speeds than do air rudders, and machines which have habitually to be moved in and out of harbours and the like will probably be fitted with an auxiliary motor of low power and a water propeller capable of driving them at 5 or 6 knots. The same motor could be used for driving a wireless outfit or a lighting plant when not used for propelling purposes.

Sport or Spectacle?

On Tuesday of last week the directors of the London Aerodrome kindly lent their ground for a species of carnival connected with some music-hall charity. As a result of their good nature the aerodrome received an advertisement which will do it more harm than half a dozen fatal accidents could do, for on the following day the half-penny Press was full of pictures of scantily clad young women of the sort commonly described as actresses photographed in all kinds of foolish and ridiculous attitudes. No doubt if such sights could be guaranteed every Saturday and Sunday a large "gate" of sorts would result, just as a certain crowd would always attend if at least one really bad smash were certain every week, but each form of attraction is equally repellent to the better class people whom one wishes to interest in aviation.

In the days when an epidemic of skirt-dancing, alleged to be in the cause of charity, afflicted Society, some cynic remarked that "Charity uncovers a multitude of shins." On this occasion, if one may judge by the photographs, the line was not drawn at shins by quite a long way. Men of the class one wishes to interest in aviation and in the products of British manufacturers are not likely to bring their womenfolk to a place frequented by people of the sort illustrated in Wednesday's pictures, and are, therefore, likely to stay away themselves. One regrets that the courtesy of the proprietors of the Aerodrome should have received so ill a recompense.

Of course, the innate and ineradicable vulgarity of the half-penny Press and its photographers and reporters—with one or two very honourable exceptions—is chiefly to blame for the publicity given to this regrettable incident, but one can expect little better from the class of people who ignore all mention of really fine flying and devote their space to chronicling photographically and verbally the fact that the Grahame-White five-seater has been sat in by an unfortunate brat whose father happens to be a Prime Minister and whose would-be ultra-smart mother insists on getting him up to look like a cross between Struwpeter and Little Lord Fauntleroy.

All this sort of thing lowers the tone of aviation and is calculated to keep the best people away from it. The proper position of Hendon in the scheme of things is an aerial combination of Ranelagh or Hurlingham and Sandown Park, where sportsmen of the better class and officers of both Services can compete on equal terms as they do in this country in all other sports, and as they do in Germany in flying competitions. It is therefore the more regrettable that it should have been turned into a mixture of Hampstead Heath on a Bank Holiday and a third-rate music-hall show by those who enjoyed the hospitality of the management.

The British Public is interested in air racing and in good flying, and, properly encouraged, aviation as a sport will soon be taken up by the best people, but once an objectionable element is allowed to be associated with it in the public mind it will fail to be accepted as a sport and will come to be regarded merely as a performance. Good sportsmen of the best class do not mind playing their game before a crowd, the bigger the crowd the better, but if the patrons of that sport

are notoriety and not notabilities, and if instead of meeting people with an acknowledged position in Society one only sees those whose names are played with by writers of "Society Notes" in the commoner class of papers—generally for a suitable consideration—not only will the better class well-to-do people stay away, but also their poor relations who cannot afford more than the half-crown enclosures on big race days.

It would be a thousand pities if just when Hendon is doing such fine work its best supporters should be driven away by the presence of undesirables, for our leading aerodrome has still much work to do in popularising aviation and making it into a sport which can be taken up by any young man of means without his losing his social position by doing so. Mr. Gates has done wonders in the last couple of years to set the aerodrome on a sound footing as a national sporting institution, and one hopes that his efforts will still be crowned with success.

These notes are not a criticism of the management of the aerodrome, which is probably better managed than any in the world, they are merely a warning against evil which may befall if great care be not exercised in the near future.—C. G. G.

The Trans-Atlantic Attempt.

The "Daily Mail" has received a cable from Lieut. Porte, R.N., to the following effect:—

"Hammonds Port (New York State), Sunday.

"I am informed that rumours are circulating in England that the flight has been abandoned. These are entirely without foundation.

"The delay is caused by difficulties in raising such a heavy load clear of the water. A solution is certain at an early date. The weight-carrying qualities and the behaviour in the air are beyond expectations."

Recent trials have shown that the "America" will not leave the water under full load. It is, however, quite possible that she might fly quite reasonably well if she could once be got into the air. Before leaving this country Lieut. Porte told the editor of this paper that he did not intend to get off the water with full load, and he then evidently had in his mind some form of launching apparatus. It is quite likely that the "America" will ultimately be tried by starting her off a trolley running on rails. Such a method would be cheaper than preparing a starting ground in Newfoundland.

At Hendon on Saturday Mr. Grahame-White made public the fact, known already to the inner circle of aviation, that his firm intends to build a trans-Atlantic machine for an attempt next year. The big shed which fell down recently is intended for its housing. Mr. J. D. North has been engaged for some time on calculations for such a machine, and Mr. Gates has also been occupying his mind with the practical considerations of construction. Nothing further has been made known about the general scheme of the machine beyond the fact that it is to be very big, and is apparently to be piloted by a syndicate, possibly with Mr. Grahame-White in the chair. Even if the "Herring Pond" is crossed previously by a single or dual control machine, the big G.-W. machine is bound to be a highly interesting affair, and one hopes to see in it the precursor of really large seaplanes.

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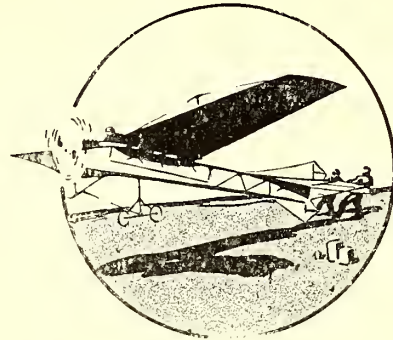
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MR. R. GARROS, the only other Aviator to accomplish the Race, also used **PRATT'S**.

It is interesting to note that **MR. W. L. BROCK** was the winner of LONDON — MANCHESTER — LONDON AIR RACE, when he also used **PRATT'S**.



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Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," July 10th, 1914 :—

Royal Flying Corps (Military Wing).—Captain Charles Darbyshire, 4th Battalion Lancashire Fusiliers, from a flying officer, to be appointed to the Reserve. Dated July 4th, 1914.

NAVAL.

The various seaplanes which are to take part in the Test Mobilisation of the Fleet on Saturday should by now be assembled at Calshot. It is said that if the weather promises well the machines are to be moored out with the Fleet on Friday night. This may possibly be done, but we have scarcely yet reached the stage in seaplane development when mooring in the open can become a habit, and it therefore seems unnecessary to jeopardise the machines merely for the sake of making a show.

* * *

In addition to the seaplanes the better part of a squadron of land-going machines, comprising Sopwiths, Bristols, Shorts, Hewlett-Blondeau-B.E.s, and Avros are assembled near Cosham, where they will give a display on their own account over the Fleet on Monday. There will be no flying on Sunday.

* * *

Naval seaplane No. 76 broke down off St. Margaret's, near Dover, on Monday morning, and was towed to Dover by a motor boat, where she was beached. The crew had a narrow escape near St. Margaret's, for owing to mist they lost sight of land till they found they were heading for the cliff. The pilot, Flight Lieut. Oliver, only just missed the top of the cliff.

Two other seaplanes also put into Dover Harbour and moored there on Monday.

* * *

Sopwith No. 103, flying from Eastchurch to Cosham, was considerably damaged in descending in Elmley Marshes through engine trouble on Monday. Flight Lieut. Littleton, the pilot, escaped unhurt.

Flight Lieut. E. T. Newton-Clare, on Farman No. 31, and with Carpenter Brownridge as passenger, flew from Eastchurch to assist in repairs. Unfortunately, in descending about fifty yards from the Sopwith the machine ran into a hole in the ground before the pilot could pull up, and chassis and lower plane were deformed. A working party was sent from Eastchurch to Elmley, and both machines were dismantled and taken back on trolleys.

Most of last week all hands at the Felixstowe R.N. Air Station were getting machines ready for the Royal Review.

On the 4th Flight Commander Rathborne and Flight Lieutenant Nanson were out on the Maurice Farman land machine No. 67. On the 9th Flight Commander Crocker was busy adjusting compasses, and Flight Lieutenant Bone took over Henri Farman No. 141, which is being temporarily attached to the Yarmouth Flight. The same afternoon, Squadron Commander Risk, with Booth, E.R.A., on M. Farman 113 and Flight Lieutenant Nanson on M. Farman No. 115, with Leading Telegraphist Stirling, left Felixstowe for Isle of Grain en route for Calshot. Flight Commander Rathborne hopes to leave in a day or two on M. Farman 114, but is at present waiting for engine spares.

On the 10th, Squadron Commander Gregory and Flight Lieutenant Bone left Felixstowe for Grain on Henri Farman 141.

In the evening of the 10th, Flight Commander Rathborne was flying the land machine 67. He was also out on the same machine for a short flight on the following morning.

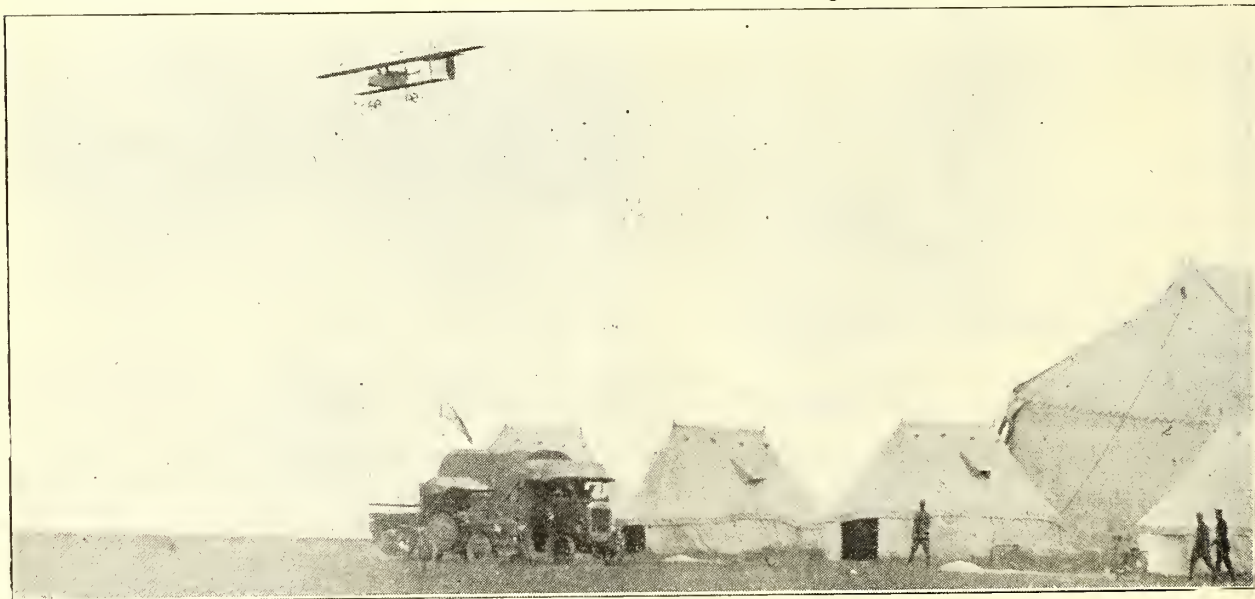
* * *

At Eastchurch on Monday of last week Short No. 152 (80-h.p. Gnome) and Maurice Farman No. 188 each made several flights, and on Tuesday M. Farman (188), and Shorts Nos. 64 (50-h.p. Gnome) and 152 flew. On Wednesday M. Farman No. 188 and Avro No. 150 (50-h.p. Gnome), and on Thursday Shorts Nos. 1 and 64 and Avro No. 150, were in use. On Friday Bristol tractors Nos. 43 and 153 (80-h.p. Gnomes), H. Farman No. 31 (70-h.p. Gnome) were out. Squadron Commander Spenser Grey on Short No. 152 (80-h.p. Gnome) and Wing Commander Samson on Short No. 65 (80-h.p. Gnome) flew to Grain. No. 65, which has now been fitted with wheels and floats, was the only machine out on Saturday.

* * *

Little flying has been done at Calshot owing to the preparations for the naval inspection. Various machines arrived at intervals at Calshot on Friday and Saturday. The first two arrived late on Thursday.

On Monday a new Short seaplane was having a preliminary trial at Calshot during the morning, Mr. Gordon Bell being the pilot. A Sopwith twin-float seaplane for the Greek Navy made a flight from Woolston late in the afternoon. A Henri Farman land machine (believed to be an Army machine) was



AT NETHERAVON.—A Henri Farman of No 3 Squadron landing over the big Piggott marquee. Two transport wagons in the foreground.



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seen flying over Hamble and Southampton Water at a great height in the evening. It was last seen flying northwards.

On Tuesday the Henri Farman, which was seen during the previous evening, made another visit to Hamble, flying higher than before, at times being obscured behind the clouds. In the evening a large Sopwith bat-boat flew from Woolston over Southampton Water, at a low altitude, but at a great speed. On Thursday a Henri Farman seaplane arrived at Calshot in the evening. It flew high and made a spiral descent to the Solent. At the same time the Sopwith bat-boat was flying over the Solent from Calshot.

MILITARY.

The following communiqués have been received:—

The following is the proposed itinerary of No. 2 Squadron, Royal Flying Corps (Military Wing), on its return from the Concentration Camp at Netheravon to Montrose:—

Sunday, July 12th, transport to Warwick.
 Monday, July 13th, transport to Lincoln.
 Aeroplanes to Lincoln (1).
 Tuesday, July 14th, transport to Scarborough.
 Aeroplanes to Scarborough (2).
 Wednesday, July 15th, halt at Scarborough (3) (halt).
 Thursday, July 16th, transport to Newcastle.
 Aeroplanes to Berwick (4).
 Friday, July 17th, aeroplanes to Montrose (5).
 Transport to Berwick.
 Saturday, July 18th.
 Transport to Stirling.
 Sunday, July 19th.
 Transport to Montrose.

[War Office, July 8th, 1914.

* * *

Royal Flying Corps (Military Wing).—Diary of work for week ending July 11th, 1914:—

No. 2 Squadron (Montrose).—The officers, N.C.O.s and men of this Squadron had a few days' leave prior to leaving Netheravon on the return journey to Montrose on Monday, the 13th instant. The journey will be made in the same way as the journey down, viz., aircraft, M.T. and personnel moving together by daily stages. The actual route followed, however, will be slightly varied.

Nos. 3 and 4 Squadrons (Netheravon).—The week has been occupied with cross-country reconnaissances and in observation of artillery fire. On Monday, 13th instant, a class of 10 officers will commence the first of a series of courses of instruction in observation. These officers are drawn from various branches of the Service, and many of them have served on the Staff.

No. 5 Squadron (Fort Grange).—No. 5 Squadron moved to their new quarters at Fort Grange, Gosport, on the 6th. The Squadron is gradually getting settled in. A few of the machines are there, and the remainder will be flown over from Farnborough and Netheravon in the course of a few days, as the tents are erected to accommodate them. The construction of the permanent sheds and workshops will be commenced shortly. The new station is an excellent one from every point of view.

No. 6 Squadron (Farnborough).—Reconnaissance work across country was carried out daily. The squadron is approaching its complement of personnel, having received parties of recruits and transfers during the week.

Nos. 1 and 7 Squadrons (Farnborough).—The week was chiefly directed to the technical instruction of recruits recently posted.

Aircraft Park (Farnborough).—Repair work to aircraft and M.T. was carried out, also the technical instruction of recruits.

Headquarter Flight (Farnborough).—Experiments on various lines were continued, and a quantity of flying carried out.

Recruit Depot (Farnborough).—A squad of 21 recruits were passed off the square by the Commanding Officer on the 5th instant, and were posted to various squadrons. Recruiting has been good during the last few weeks, and the advantages which the Corps offers are beginning to be better realised in the manufacturing districts.

[War Office, July 14th, 1914.

* * *

A new station for a squadron, or more, of the R.F.C. is in preparation at Orfordness, in Suffolk, about mid-way between

Lowestoft and Felixstowe. This will be, for the present at any rate, the only R.F.C. station in the Eastern Command. It is within easy flying of Ipswich, and some 20 miles farther from Colchester. The R.F.C. will shortly have stations round the coast at Montrose, Orfordness, Dover, and Gosport, the only inland stations being on Salisbury Plain and at Farnborough. Doubtless these have been arranged for definite strategic reasons, but it occurs to one that the edge of the land is better suited for the Navy, for the pilot of a military machine returning in cloudy or foggy weather may well find himself out at sea.

* * *

On Friday last Lieut. Gill, No. 5 Squadron, R.F.C., was starting on a Sopwith machine at Fort Grange, the new R.F.C. station near Gosport, with Capt. Bremner, R.E., as passenger, and when about 40 ft. in the air the aeroplane suddenly dived and descended with considerable force. The machine was considerably damaged, and Capt. Bremner sustained a fractured leg and injuries to the head. Lieut. Gill escaped with minor injuries. So far as one can gather, the accident was due to the machine losing flying speed and striking the ground before she had time to pick up speed again.

* * *

Six B.E.s of No. 2 Squadron, R.F.C., reached Lincoln on Monday. They started from Netheravon in the morning en route for Montrose and met some fog. The pilots were Capt. Dawes, Waldron, and Todd, and Lieuts. Dawes, Noel, and Martin. It was reported that Lieut. Corballis was at Melton Mowbray with engine trouble; Major Burke had been brought down at Nottingham, and Lieut. Harvey-Kelly was on his way. The distance to Lincoln is 150 miles.

* * *

It will be remembered that some months ago this paper announced that the new R.E. biplanes (120-h.p. Beardmore-Austro-Daimlers) are to be built by the Royal Aircraft Factory, and not by outside constructors under contract. It was also announced that a large order for 120-h.p. Beardmore-Austro-Daimler engines and other fittings had been placed for these machines. The fact that the R.E.s are to be built by the R.A.F. alone has apparently just been discovered in certain quarters, and is evidently causing some cerebral commotion. Viewed in its proper light, this move is for the good of the "trade" and of aviation generally. One welcomes the R.A.F. as open and honest competitor, and wishes it every success in its efforts to produce something better than has yet been seen. There is now every encouragement to independent constructors to produce something better still. It must be remembered, in this connection, that the "trade" has now to deal with the Aeronautical Inspection Department, which is moved solely by the desire to buy the best possible aeroplanes, and is not in any way a producer. The R.A.F. has nothing to do with the products of private designers and builders, and has taken its proper place as a Government Dockyard, and it must stand or fall by the worth of its own products. It cannot, as in the past, "queer the pitch" of a competitor. The constructor who can beat the R.E. has a hard task, but it can be done, and the firm that does it is assured of substantial orders. If R.E.s were built under contract it would merely mean, as in the case of B.E.s, that better designs of private origin would be held back owing to the pressure of work on Government designs, and that means delaying progress towards the safe, stable, and controllable aeroplane of the future.

CANADA.

It is reported by the "Birmingham Daily Post" that, as the result of communications between the Imperial and the Dominion Governments, steps will be taken at an early date to organise a flying corps for the Canadian forces. Two officers attached to the Ministry of Defence in Ottawa are to arrive in England during the present month, and it is assumed that after education at Farnborough and on Salisbury Plain orders will be given out for a number of aeroplanes of the latest type for Canada. It is also expected that a certain number of pilot-instructors will be engaged.

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LONDON—PARIS—LONDON.

STARTING FOR PARIS.—Above, Lord Carbery (Bristol, 80-h.p. Le Rhone). Middle, M. Garros (Morane, 80-h.p. Le Rhone). Below, M. Renaux and Miss Unwin (M. Farman, 120-h.p. Renault).

The first flying race from London to Paris and back is over and done with, happily without injury to anyone concerned, and the management of the London Aerodrome is to be highly congratulated on carrying through successfully at the first attempt a competition which if it had been suggested only a little while ago would have been regarded as a fool's idea. The entries were disappointingly few, and the starters fewer still, but it showed what could have been done if this had been a really sporting country—such as Germany—and it showed very conclusively the progress aviation is making.

Mr. Walter Brock, now winner of the three biggest races of the year—the Aerial Derby, London-Manchester and back, and London-Paris and back—definitely takes his place among the World's great pilots, for he has beaten in open competition by sheer airmanship (in its proper sense) two at least of the finest fliers in Europe—MM. Garros and Renaux. His victory is conclusive evidence of the efficacy of his early training at Hendon, and of Mr. Gates' sound judgment of men in selecting him to represent the Grahame-White Co. in big competitions. Mr. Brock won by sheer good flying, for he is not a "stunt" flier of any sort, he has never looped and I have never seen him do a vertical bank, except by accident. The day before the race he spent hours adjusting his compass, and as a result he flew absolutely to schedule time and course—that is good management. At Harrow on the outward journey he was not sure he had been seen by the observer, so to make sure he

flew a complete circuit round the hill, wasting time but making certain of being properly checked at the turning point—that is generalship. At Hardelot going out he stopped for petrol, and discarded his Boddy floating jacket. Before leaving he said he would be back there at 3 p.m. for more petrol and to resume his jacket. He arrived at 2.59 p.m.—that is accuracy. It is attention to details of this sort that wins races rather than the slap-dash "win or die" method.

The Morane monoplane flown by Mr. Brock was the same on which he won the two other big races. It was built throughout in the Grahame-White works, down to the smallest tin-clip, under the supervision of Mr. "Bill" Law, who is to be congratulated on a very fine piece of work. It has been carefully looked over between the races by the works people, but there has been no need to do more than tighten up an odd nut or wire here and there. Otherwise it is as good as new. The fabric, doped with Emaillite, was as tight as a drum when it finished on Saturday, a great contrast to M. Garros' French-built machine in which the fabric was literally hanging in bags in the evening, though it was quite tight when he started in the morning, and there was none of that general "floppiness" about Mr. Brock's machine which one might reasonably expect in a machine which has flown well over 1,000 miles and made numerous landings at home and abroad.

The Gnome engine (80-h.p.) gave no trouble in any of the races, and seems fit to go and do them all over again. The

self-same engine took Mr. Brock through the other races, as did the same Integral propeller, thus emphasising for the *n*th time the efficacy of the Gnome-Chauvière combination.

The Day Before.

The interest really began on the Friday, with the arrival of competitors.

M. Garros turned up first on a new type Morane with wings of a new section. These have a distinct Phillips (or Nieuport) entry, and have the trailing edge slightly upturned—at any rate, if it is not actually turned up it is flattened out so much that the upper surface makes a reversed curve in meeting it after coming over the rear spar. Readers of Mr. Sayers' articles on the N.P.L. experiments will note the fact with interest. This machine also has a very low chassis with the wheels farther forward than in the old type, so that it has less tendency to turn over on its nose when landing. It is noticeably faster than the older Moranes, and with the so-called 80-h.p. Le Rhone (which gives about 10-h.p. more than the 80-h.p. Gnome, and weighs more also) it could probably give Mr. Brock's machine nearly 10 m.p.h. The whole afternoon was spent trying to get the engine to pull properly, but it steadfastly refused till the magneto was changed.

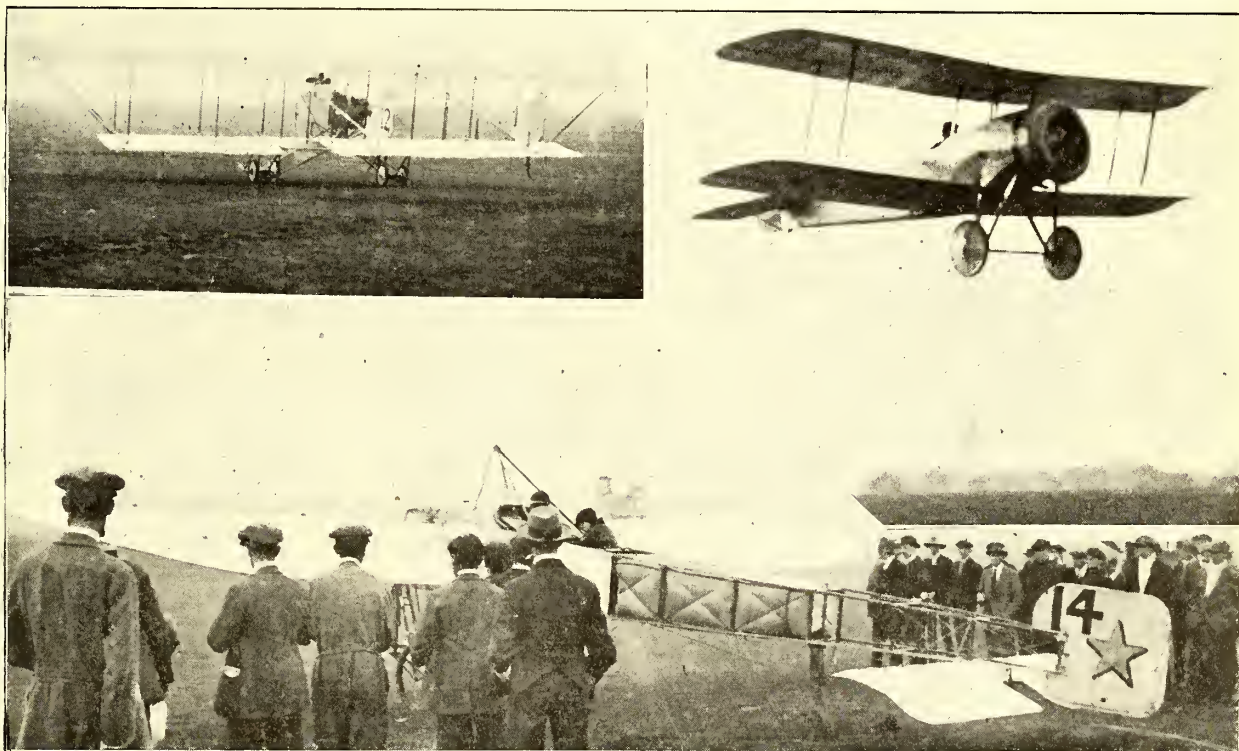
Herr Helmuth Hirth, the famous German pilot, who is strangely like M. Garros in face and build, started from Paris about the same time on a twin machine. It was his first flight on a Morane—rather a change from the big Albatros—but he flew well as far as Surbiton, where a valve rod broke and chewed up the cowl over the engine. After a few hours the rod was replaced and the cowl taken off, and Herr Hirth arrived smothered in oil. The rest of the day was spent putting things right, but the engine refused to run properly, so Herr Hirth was unable to start, a great pity as he is a fine sportsman, and one would have liked to have seen him put up a good show. During his short stay in England Herr Hirth made many friends, and one hopes to see more of him in future. In fact all the German pilots we have had here, Herren Hirth, Roempler, Volmoeller, Thelen, Voigt, and Friedrich, have been liked and respected, and one feels that if

one saw more of the German fliers it would conduce to a more cordial feeling between our two nations. As a matter of fact the average German pilot, somewhat naturally, strikes one as being more one of ourselves than does the pilot of any other country.

Of the other foreign competitors, M. Daucourt, on the Clement-Bayard, left Paris on Friday and piled his machine up at le Crottoy on the way. M. Parmelin on the Deperdussin was reported as having got to Barnet and damaged his machine, but we did not see or hear anything further of him. M. Malard (Nieuport), and M. Lenoir (Ponnier), apparently did not start from France. M. Verrier's Henri Farman did not arrive. So the only other foreign competitor was the famous Maurice Farman pilot, M. Renaux, who arrived on a huge "short-horn" Maurice with a 120-h.p. Renault. This machine seemed very fast for a big biplane, and struck one as being just what one would like for a really long tour by air—with such a pilot, and, for my personal choice, another engine. The nacelle is about the size of the cabin of a small yacht, and one could sleep in it with comfort by putting a lid on the top.

Of the British entries, the Sopwith entry was scratched, owing to Mr. Hawker's failure to alight successfully on a tree-top, and Mr. Skene, on the Martinsyde, en route for Hendon, mysteriously arrived over Potter's Bar, where a valve-rocker broke, so he spent the rest of the day, and the night, there. The three Grahame-White entries, Messrs. Brock, Noel and Carr, all on identical Moranes built by Mr. Law at the Grahame-White works, were all ready to start. Lord Carbery did a test flight on the Bristol scout with the Le Rhone doing about 900 r.p.m. instead of 1,200, and despite this he did about 80 m.p.h. against the wind and nearly 110 m.p.h. with it, so his speed on full revs must be well over 100 m.p.h.

The last competitor was Mr. T. Elder Hearn, a music-hall artiste, who had entered on an 80-h.p. tandem Blériot of modern type. He made a test flight accompanied by his brave small wife, and a very unpleasant sight it was. Air-bags had been fitted in the fuselage aft of the passenger seat.



On left M. Renaux and Miss Unwin getting off. On right Lord Carbery getting off. Below, Mr. and Mrs. Hearn (Blériot, 80-h.p. Gnome) about to start.—Note the air-bags in the fuselage.

and these may have interfered with the controls. Also the machine was obviously assembled in a hurry, and was all out of adjustment, the tail being degrees out of line with the wings, and the warp apparently out of action. Also the engine was quite out of tune. Altogether it looked, as a spectator said, as if it had been put together at Gamage's—meaning that it looked like a toy model job. It flew worse than most decent models, and far worse than any Blériot I have seen for a very long time. It staggered off the ground, it took turns banked the wrong way, it wallowed in the gusts (which were many), and the poor tail whipped about till one expected it to fall off. Everyone was devoutly thankful when it landed tail-skid first, "en pancake," without damage. Mr. Hearn really ought to get someone who understands Blériots thoroughly to superintend the assembling of his machine, for it is not fair to a singularly fine make of machine that it should be allowed to perform in this way, nor is it safe for the pilot or his passengers.

The Start.

Saturday morning opened badly. At 5 a.m. the sky was dark and dull, at Hendon one could barely see to Bittacy Hill, and the machines were invisible in the clouds at 500 feet. There was a stiff easterly breeze, so although some people feared another Aerial Derby day, others realised that it was only London dirt. East Ham was getting its own back on the West End. Epsom and Folkestone reported slight mist and no more, but the problem was to get the competitors as far as Epsom, for they had to be seen at the turning point at Harrow.

The start was postponed for an hour, and then Mr. and Mrs. Hearn went off, but their engine stopped before they got off the ground. Then M. Renaux, carrying Miss Unwin as passenger, got away in great style. Next M. Noel started, getting off with a banked turn, in his favourite racing fashion, and disappearing quickly in the mist. Mr. Hearn meantime induced his engine to fire again, and managed to leave the

ground. There was a repetition of the previous evening's performance, only in a less degree, as there was less wind, and after two or three circuits of the aerodrome he wisely decided to discontinue, which he did uncomfortably close over the heads of those who were starting Messrs. Brock and Carr.

Soon afterwards these two got away in perfect form, heading out directly on their correct course, and there was a long wait before M. Garros started. Meantime M. Renaux returned, having been unable to recognise Harrow in the mist, though we learned later that his engine had been heard there. He waited for the air to clear, and finally left an hour after his schedule time.

M. Garros went off like a rocket, making a good course, and finally Lord Carbery, the scratch man, left after a couple of rather wavy circuits due doubtless to his life-jacket pushing him a little farther forward than usual in his seat, for on these very fast and tender machines a trifle like this makes quite a difference at first.

The Afternoon.

The afternoon was divided between receiving reports of the progress of the race, watching exhibition flights, and a race for the handsome trophy presented by Mr. Teofani.

Incidentally news came in that Mr. Skene had left Potter's Bar, only some eight miles from Hendon, in time to start but had somehow lost his way in the mist, so that he fetched up right over the City. Apparently he then recognised London because a river ran through it, so he did the wisest and safest thing and flew straight up river back to Brooklands. A great pity, for with its speed and staying power the Handasyde had a very good chance of winning both scratch race and handicap.

Quite early it was known that Mr. Carr had landed at Kenton, near Harrow, owing to mist, and had gone on after the others had passed him. Then we heard that M. Noel had landed near Dungeness with engine trouble, and had damaged



LONDON-PARIS ENTRANTS.—Left to right, Lord Carbery, M. Garros, Herr Hirth. Below, M. Renaux, Miss Unwin, Mr. Hearn.

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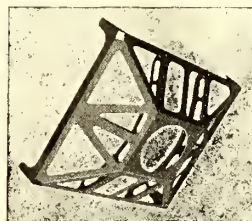
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his machine too badly for him to go on. Mr. Carr also landed in the same district, and as it was then too late to go on he started to fly back, and was again obliged to descend near Ashford, where he buckled a wheel and strained a wing tip.

Messrs. Brock, Garros, Renaux, and Lord Carbery reached Paris safely. Mr. Brock landed by arrangement at Hardelot, where Mr. Gates had arranged a petrol depot in charge of Mr. Gist for the G.-W. team. It took twelve minutes to fill up the tanks, but it was calculated to waste less time than would have been lost by slowing the machines with the load of big petrol tanks. One must therefore deduct twenty-four minutes from Mr. Brock's official flying time if one wants to arrive at his actual speed when travelling.

M. Garros arrived a long time behind Mr. Brock, having had more trouble with his engine on the way. M. Renaux and Miss Unwin arrived without trouble,

circle of the elect, including Sir George and Lady Reid—to whom Mr. Grahame-White was making a nice little speech on the presentation to him of the trophy he had just won.

The Finish.

Just before the race started it was announced that Mr. Brock had passed Folkestone, and within a minute or two of his expected time, and well in front of the time set for him by the handicap on the morning's weather, he hove in sight, coming dead on the line by which he had left in the morning. After a circuit of the aerodrome he landed amid riotous enthusiasm, the first man to fly from London to Paris and back in the day, and the winner of the £500 prize presented by the International Correspondence Schools for the fastest time in the race, as well as the £300 for the first place in the handicap, presented by the Royal Aero Club. A very notable performance.

He was duly "chaired," and transported along the enclosures in a car, after which he returned to his usual occupation of chewing, and modestly relating his adventures to his friends. He had flown without trouble all through, landing at Hardelot both ways. Fog did not trouble him after Epsom. He crossed the Channel at about 2,000 ft., seeing few ships on the outward journey and more on the return. This, strangely enough, was his first cross-Channel flight. At Buc the only person he knew was Lieut. Sabelli of the Bulgarian Army, and formerly of Hendon and Brooklands. He passed over Dungeness in both directions, being driven rather more to the west than he intended.

M. Garros turned up after a long wait, coming in the wrong direction over the Welsh Harp, after having passed over Ranelagh and Hammersmith. Immediately he landed and before his engine had stopped he was asked whether he had turned the Harrow control. Apparently he had forgotten it, for he opened out his engine and flew straight off there and back, thus lengthening his official flying time by some ten minutes or so. He had had continual engine trouble, and at Buc had changed magneto and propeller, being delayed half an hour after his proper starting time. He was also enthusiastically received, for M. Garros is very popular among all connected with flying in this country on account of his modesty in spite of his great reputation as a flier. One wishes him better luck next time he comes here.

Before M. Garros arrived word came that Lord Carbery had passed Boulogne, and he was expected soon after M. Garros. Time passed, and people went away, but no news

came, so we grew anxious about him, though we felt confident that he was well able to look after himself in any emergency, and could land the fast little Bristol as well as it was possible for any pilot to do. At last, very late in the day, one heard that he had fallen into the Channel, owing to his engine stopping about 15 mins. from the French coast, and had fortunately been picked up by a steamer, which transferred him to H.M.S. "Vincent," by which vessel he was brought to Folkestone. The Bristol floated excellently, and Lord Carbery did not even get wet, though afloat for a quarter of an hour. The machine was somewhat damaged in the salvage operations, but the engine and all the principal parts were undamaged. Everyone will be delighted at Lord Carbery's escape, for we are all too short of young sportsmen of his quality, and his freedom from "side," his undoubted skill in flying fast machines, and his pluck in tackling really big cross-country journeys have earned him a very fair share of personal popularity among those concerned with flying. One hopes yet to see him pull off a big event, and one can assure him of a great reception when he does so, whether he cares for popular applause or not.

LONDON-PARIS-LONDON.

**TIME CARD.
LIVRE de BORD.**

No. <i>6</i>	Name of Competitor Nom du Pilote <i>W. L. Brock</i>					
Machine Appareil <i>Morane Monoplane 80 h.p. Gnome.</i>						
OUTWARD. SORTIE.	Time of Arrival. Arrivée.	Depart. Départ.			Signature of Timekeeper. Signature du Chronométrateur.	
HENDON Start HENDON Départ		<i>7</i>	8 <i>45</i>	<i>0</i>	<i>Alphons</i> <i>7.45.0 Alph.</i>	
Arrivée à BUC	<i>11 18 24</i>				<i>Edmond</i>	
HOMEWARD. RETOUR. Départ de BUC		<i>13 18</i>	<i>24</i>		<i>Edmond</i> <i>A.M.S.</i>	
HENDON HENDON Arrivée	<i>4.48.6.</i>	<i>total time.</i>	<i>9.3.6</i>	<i>7.3.6</i>	<i>Edmond</i>	

AVIS AU CHRONOMÉTREUR À PARIS (BUC).

L'arrivée à l'aérodrome de Buc sera chronométrée au moment de l'atterrissage et notée sur le livre de bord par le chronométrateur. Le signal du départ de Buc sera donné par le chronométrateur pour chaque pilote deux heures juste après son arrivée. Le temps du départ doit être noté sur le livre de bord, ce dernier étant remis à chaque pilote avant son départ. Si le pilote, pour une raison ou autre, ne partirait pas au signal donné, le temps écoulé depuis le signal pour partir et le départ actuel doit être compté dans le temps du vol.

W. L. Brock *Steward*
A. R. Bennett *H. M. S.* *R. A. C. C.*

A Reproduction of Mr. Brock's Way Bill.

bar losing their way at Epsom and landing at Gravesend to ask their direction, but owing to their delayed start they did not turn up till 2.48 p.m., and as the prescribed two hours' stop at Buc meant that they could not leave till 4.48, and so would not be back before dark, they decided to return next day. Lord Carbery must have got badly off his course, for he lost much time, being actually slower than Mr. Brock's monoplane.

About 4.30 p.m. the race for the Teofani Trophy was flown, Mr. Grahame-White winning on a Maurice Farman by a short distance from Mr. Lillywhite on a G.W. box-kite, Mr. Barrs on a Blériot being a bad third. M. Verrier retired in the last lap but one, seeing that he could not win, and, being apparently much disturbed by his lack of success, he proceeded thereafter to perform various impish tricks with passengers, giving imitations of the machine being out of control about twenty feet from the ground, switchbacking violently, and finally doing a curving dive at the middle of the enclosures in a way which drew genuine shrieks of terror from various feminine spectators within the rails, and incidentally caused commotion among a

So ended the first out-and-home race between the capitals of the World's two greatest Powers. The fourteen entries included seven French, one German, one Swiss, one American, and four British subjects. Of the six starters three were French, two were British, and one American. An American won, a Frenchman was second, and a sporting Irishman fell into the Channel. And England is the richest country in the World, and prides itself on its sportsmanship. In solid, stolid, unimaginative, machine-made Germany, thirty men, each with a passenger, start in a big cross-country race, and anything from fifteen to twenty of them finish. Naval and military officers are allowed, and even encouraged, to compete. Government departments give prizes for service and civilian pilots. Princes of the blood-royal receive the competitors at the finish, act as officials at controls, and even build and enter machines. Of course the German is not a sportsman—at least the Englishman does not consider him so. The German is merely a sentimentalist and a maker of cheap mechanical toys in the estimation of the average Englishman. One wishes that the average Englishman, who thinks he is a sportsman because he loses his money on fast women and slow horses, could watch the progress of a big German air race, and see the way those German machines are built. It might knock some sense into his thick head.—C. G. G.

Notes from Folkestone.

Saturday, 11th, Folkestone Control.

The weather conditions here, though not all that might be desired, were fairly good, there being only a slight haze over

the sea and a very little breeze. Mr. Brock passed on the outward journey at 9 a.m., but being very high up was barely visible. The next to appear was Lord Carbery, who was sighted at 9.30. He made a wide circle round the town and passed out over the Channel at about 4,000 ft. Everyone was much impressed by the enormous speed of his Bristol. The engine of another machine was heard about 11 o'clock, but nothing was sighted; this was probably M. Garros. M. Renaux passed over at 11.10, flying on almost the same line as he covered Thursday morning.

The first machine to appear on the return journey was Mr. Brock's Morane, he came up wide to the westward, and making a sweep, crossed over the control (The Harbour) at 3.45.

The roar of two more engines was next heard and two naval seaplanes (biplanes) flew down Channel, to be rapidly followed by two more, one of which appeared to be packed with people like an L.C.C. steamer.

M. Garros crossed the pier at 5.15 p.m., coming from the same direction as Mr. Brock. News then arrived from Hendon to say that Mr. Brock arrived there at 4.48, so that he only took 63 mins. for the 84 miles from Folkestone.

A wire informed us that Lord Carbery had left Hardelot at 4.46, but had not been heard of since, so that as time passed on we began to feel rather concerned about him, but subsequently we learned that he had made a forced "landing" in the sea, been picked up by a passing steamer and was on H.M.S. "St. Vincent," which is anchored off here.

M. Renaux passed at 10.35 a.m. on Sunday.—J. G. R.

SOME FIGURES OF THE LONDON-PARIS-LONDON RACE.

Competitor.	Machine.	Motor.	Started	Arr. Paris.	Flying Time.	Left Paris	Arrived Hendon	Flying Time.	Total Flying Time.
BROCK	British Morane	Gnôme	7.45	11.18	3h. 33m.	1.18	4.48	3h. 30m.	7hrs. 3min. 6secs. †
GARROS	French Morane	Le Rhône	8.5	12.10	4h. 5m.	2.10*	6.33	4h. 23m*	8hrs. 28min. 47secs.
CARBERY	Bristol	Le Rhône	8.10	12.4	3h 54m.	2.4	—	—	—
RENAUX	Maurice Farman	Renault	8.43	2.50	6h. 7m.	—	Sunday	—	—
CARR	British Morane	Gnôme	7.50	—	—	—	—	—	—
NOEL	British Morane	Gnôme	7.40	—	—	—	—	—	—

† From this time must be deducted 24 minutes and some odd seconds spent at Hardelot, so that the actual time in the air was 6 hours 39 minutes.

* Delayed half an hour at Buc, so really left about 2 40 p.m. Also went wrong near London and lost a further 20 minutes at least, including going out from Hendon to Harrow and back, so actual time in air was less than 3½ hours.

The New Volumes of Eiffel.

Two new volumes of M. Eiffel's monumental work on the Resistance of the Air have just been published by Dunod-Pinet, of Paris. The first volume contains the text of the experiments in some 460 pages; the second volume (called the "atlas") contains the tables setting forth the numerical results, and 39 plates.

The tests include a variety of experiments on round bodies, wires, cables, struts, etc. Following these are tests on a number of different plane sections, about 50 in number, including the new Bréguet wings, Blériot, Morane-Saulnier, Farman, Constantin, Capt. Dorand, Howard-Wright, and a variety of others. Some of these give astonishing fine results.

There is also a series of tests on models, including main planes and tail planes. There are also tests on models of complete machines, commencing with one of Capt. Dorand's, this being a machine of the Maurice Farman type with staggered planes; also tests of the Drzewicki machine which killed Capt. Felix, Lieut. Blard's machine, the Blériot military type, a military Maurice Farman, Bréguet, Morane, the "Paris" monoplane, Mr. Colliex's tandem hydro-aeroplane, a Nieuport, and a flying boat or two. There are also tests on models of the Clément-Bayard dirigible, tests of the wind pressure on airship sheds, and tests of 26 different types of propellers. The results of these are all given in the atlas. There are also tests on such things as wheels, nacelles as distinct from fuselages, floats, fuselages of monocoque and ordinary type, which give one much food for thought.

M. Eiffel's latest product has the following advantages over the Government Blue-book issued by the Advisory Committee on Aeronautics and the National Physical Laboratory, (a) it is

decently bound, (b) the illustrations are thoroughly well done, (c) it is arranged in an orderly fashion, (d) the printing is excellent, (e) the reading matter is really readably written. The price of the book is £2, and it is well worth it. Copies may be obtained at the office of THE AEROPLANE, 166, Piccadilly, W.

Blackburn Expansions.

The Blackburn Aeroplane Company, which has been carried on so pluckily by Mr. Robert Blackburn on his own account ever since the beginning of aviation in this country, has now been turned into the Blackburn Aeroplane and Motor Co., Ltd., their address being Olympia, Leeds. The registered capital of the company is £20,000, and the directors are Messrs. Robert Blackburn and J. E. Jackson.

The company has lately acquired new and extensive premises, and has now one of the largest aeroplane workshops in Great Britain. It will be remembered that the Blackburn monoplane at the Aero Show early this year was quite a sound workmanlike job, and no doubt the good opinion then gained has encouraged other people with money to join Mr. Blackburn in extending the business.

Mrs. Hamel, the mother of the late Mr. Gustav Hamel, writes to say how sorry she is that there should have been a mistake about admission to the church at which the service in memory of her son was held. Some papers unfortunately omitted to announce that no tickets were needed, and that only a few reserved seats were kept for the late Mr. Hamel's relatives and intimate friends, and Mrs. Hamel is anxious that none of her son's aviation friends should feel they had been forgotten because no specific invitations were sent to them.

A New World's Height Record.

On Tuesday last, July 14th, Herr Oelerich, one of the oldest German pilots, on a D.F.W. standard military biplane of the latest type, fitted with a British-built Beardmore Austro-Daimler motor of 120 h.p., and an Integral propeller, put the World's height record up to 7,550 metres (24,770 feet). The machine had only just come out of the works and made a few preliminary test flights. It is built entirely of steel. The wings, which are designed to give inherent stability, have a crescent-shaped leading edge instead of the straight edge hitherto associated with the D.F.W., and the machine weighs 1,650 lbs. empty, so that the efficiency of the crescent-shaped wing is thoroughly proved.

In its preliminary tests, carrying the full German military load of 200 kilos (450 lbs.), and in addition fuel for six hours' flying, the climbing speed of this machine was 780 feet per minute. One gathers that this identical machine is now actually on its way to England.

It will be remembered that Lieut. Bier on an Austrian-built D.F.W. already holds the World's record for altitude for pilot with one and with two passengers, and that Herr Schüller, another D.F.W. pilot, holds the World's record for a cross-country flight with two passengers.

The Week's Work.

Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Brooklands ...	Imposs.	Wind	Rain	Fair	Windy	Wind Misty	Rain Fine
Calshot ...	Fine	Fine	Fair	ine	Fine	Fine	—
Eastbourne ...	Windy	Fine	Windy	Calm	Mist	Fine	Stormy
Eastchurch ...	Fine	Fine	Fine	Fine	Fine	Fine	Show'ry
Hendon ...	Wind	Fair	Fair	Fair	Fair	Fair	—
Waterloo (Liverpool) ...	Fine	Fair	Wind	Fair	Wind	Wind	—

Flying at Hendon.

The usual exhibition and passenger flights were made on Thursday, most of the flying being done by Messrs. Lillywhite, Carr, Noel and Verrier.

On Saturday the London-Paris-London race, reported at length elsewhere, occupied attention.

On Sunday it rained hard till 2 p.m., after which it cleared and turned into a beautiful afternoon. M. Renaux and Miss Unwin arrived from France at noon, having flown from Boulogne non-stop. During the afternoon Mr. Brock flew to a height of 9,500 ft. on his 80-h.p. Morane; Mr. Carr perpetrated four loops and a tail slide on "Lizzie," and Mr. Beaumann exhibited the Beatty-Wright. Mr. Howarth and M. Noel flew the Maurice Farman, Mr. Lillywhite and Mr. Barrs flew the 80-h.p. Blériot, and Messrs. Gates, Norris and Dunne flew G.-W. box-kites. M. Pierre Verrier carried passengers on the Aircraft Company's Maurice Farman.

Flying at Brooklands.

Owing to postal peculiarities, last week's Brooklands report arrived too late for the press, and must therefore be condensed. During the week Mr. McGordon, who has now become disaccustomed to the Curtiss control, was flying well on the 80 Sopwith. Mr. Barnwell tested the latest type Vickers gun-carrier, among his passengers being M. Jullerot, of the Bristol Co. The machine flies very well, though it is a trifle slower than the previous gun-carrier. Mr. Mahl on the Sopwith biplane had his first engine trouble in the air, a connecting rod breaking while outside the track, and he only just managed to glide in. This particular Gnome has been running for nearly eight months in constant use, week after week, without being overhauled, and, except for slight misfiring at starting, it has run perfectly. It has run far longer than it has ever been supposed possible to run a Gnome without overhaul. Mr. Gower made a number of flights on the 50-h.p. Blériot, Mr. Hawker took an 80 Sopwith to 11,000 feet, Mr. Dukinfield-Jones carried many passengers on the D.F.W., two new Avros and a Sopwith Scout for the Army arrived on Friday. Mr. Charlesworth, a Bristol pupil, took his certificate. Lieut. Clemson and Captain Kane, both on Vickers school machines, succeeded in deforming their machines considerably.

On Monday Mr. Creagh's Bristol tractor biplane arrived; this machine looks very smart with the metal work of the fuselage and the landing chassis painted yellow and black.

On Tuesday Mr. Dukinfield-Jones was out on the D.F.W. Mr. Barnwell with Mr. Knight as passenger on the Vickers gun-carrier was forced, owing to engine failure, to land in a field near Ripley. In doing so the skids caught a barbed wire fence, which was torn up for about 100 feet, the only damage to the machine being the breaking of the rear skid. Mr. Barnwell arrived back at Brooklands alone. Mr. Hawker flew a Sopwith Scout to Farnborough. In the afternoon Mr. Dukinfield-Jones was out on the D.F.W., and while taxiing home the wind caught the tail and turned it round, the machine making a violent rush for the Vickers "Gun Bus," which was peacefully snoozing in its shed. The rush was, however stopped by a fence, which tore the fabric of one wing and broke a rib. One hopes these racial feuds will not become common. Later Mr. Barnwell was out passenger carrying on the Vickers Gun Carrier, and while taxiing the wind turned it over onto a wing, breaking some ribs. Mr. Skene was out on the Martinsyde.

On Wednesday afternoon Mr. Hucks was testing his Blériot, doing loops and upside down flying, twice doing four loops in succession, and flying a complete circle on his back.

On Thursday Mr. Barnwell on Vickers gun-carrier with Mr. H. Webb as passenger went to Croydon and back. Mr. Lucas on a Bristol box-kite whilst climbing steeply, switched off and landed on the tail and one side of the chassis, which broke and did considerable other damage to the machine. Mr. Skene was out on the Martinsyde, Mr. Jones on the D.F.W., and Mr. Gower on the 50-h.p. Blériot. In the afternoon B.E. 348, piloted by Lieut. Lawrence with Lieut. Roche passenger, arrived from Farnborough, and returned later. Mr. Barnwell with Mr. T. W. Elsdon as passenger flew the Vickers gun-carrier to Farnborough and back. M. Bjorklund arrived from Hendon on a 50-h.p. Blériot. Messrs. Jones and Skene were out several times on the D.F.W. and Martinsyde, respectively.

The following pupils took their brevets: Mr. W. H. Treloar (Bristol), height 950 ft.; Mr. C. C. Godwin (Bristol), height 2,500 ft.; Capt. Kane (Vickers), height 800 ft.; and Mr. W. D. South (Blériot), 450 ft., the latter being the first Blériot school pupil to pass his tests at Brooklands. On Friday Mr. Barnwell, with Mr. Webb as passenger, flew to Joyce Green (Vickers flying ground) on the "gun-carrier," and returned in the evening, taking 25 minutes for the return journey. Mr. Lawrence Hall arrived from Hendon on a 50-h.p. Avro, and left later for Brighton. In the afternoon Mr. Skene left for Hendon on the Martinsyde.

On Saturday Mr. Skene arrived from Potter's Bar, the engine having been put right. Mr. Jack Alcock flew to Shoreham on the Sunbeam Farman. Mr. Sippe was out testing Mr. Creagh's Bristol biplane. Mr. Barnwell was out on the old type Vickers gun-carrier. In the afternoon Mr. Hawker was testing the Sopwith machine he flew in Australia. Mr. Mahl took a passenger on the 80-h.p. Sopwith, and Mr. Sippe took Mr. Creagh as passenger on the latter's Bristol machine.

On Sunday Mr. Hawker was looping on the 80-h.p. Sopwith scout. Mr. Mahl was flying the 80-h.p. Sopwith, and later Mr. McGordon the same machine, Mr. Sippe flew Mr. Creagh's machine, and Mr. Dukinfield Jones the D.F.W.

The Sussex County Aero Club.

Saturday, July 18th, speed handicap for the Shoreham Cup, value £50. Bomb dropping, exhibition flights, etc.

Sunday, July 19th, exhibition and passenger flights. Band. The cup presented by the Club was won by Mr. Eric Pashley from five other competitors. The fortnightly American lawn tennis tournament was won by Mr. and Mrs. Walker.

Flying at Shoreham.

The inaugural meeting of the season at the Shoreham Aerodrome during the past week-end proved a great success.

On Saturday, Mr. Alcock, on his 100 Sunbeam M. Farman, arrived from Brooklands in 38 minutes, and Mr. J. L. Hall, whose services had been secured for a looping display, came over in his Avro. The brothers Pashley flew a new 50 Gnome biplane, Mr. W. H. Elliott a Farman box-kite and 45 Green Avro, and G. J. Lusted another Farman box-kite.

After Mr. Hall had duly looped, to the great satisfaction of the spectators, the race for the Brighton Cup was run off. This was a 12-mile handicap speed contest, the winner receiving the trophy and £70; the 2nd man, £20; and the 3rd, £10.

Two preliminary 4-lap heats were first run, resulting as follows:—First heat: 1, Cecil Pashley, Henry Farman biplane, 3 mins.; 2, J. Alcock, Maurice Farman biplane (scratch). Also flew: W. H. Elliott, Henry Farman biplane, 3 mins. Won by 31 2-5th secs. Second heat: 1, J. L. Hall, Avro biplane (scratch); 2, Eric Pashley, Pashley biplane (1 min.). Also flew: G. J. Lusted, Henry Farman biplane (2 mins. 45 secs.). Won by 1 min. 3 2-5th secs.

In the final 6-laps, after a good race, Mr. Eric Pashley won with a good half-minute to spare.

On Sunday, heavy rain in the morning stopped all flying. But in the afternoon the weather cleared, and many passengers were taken up. The chief attraction was a friendly match between Messrs. J. L. Hall and Eric Pashley over the same course and handicap conditions as on Saturday, Mr. Pashley again beating Hall by the small margin of 8 seconds. In the evening, Mr. Hall again looped at a great height.

Flying at Eastbourne.

On Thursday and Saturday last Mr. Fowler on his H. Farman seaplane gave passenger and exhibition flights at Eastbourne.

Flying at Eastchurch.

Mr. Leo Jezzi made several flights on Saturday and Sunday on his biplane (35 J.A.P.). Mr. Ogilvie's N.E.C. two-stroke engine was recently taken down for overhaul after about 2 years' use, and it was found in excellent condition, not a bearing needing renewing.

Flying at Scarborough.

On Saturday last Mr. Hucks opened the Aviation Week at Scarborough with thrilling demonstrations of looping over the North and South Bays, which exhibitions were brought to an abrupt termination on account of his new 60-h.p. Blériot developing engine trouble. In the afternoon he brought out his 80-h.p. Blériot, and kept many thousands of visitors amused. On Monday Mr. Hucks' skill saved him from a bad accident, as, when looping low down over the sea, his engine stopped and he was compelled to make a hurried landing on the sands, which were densely packed with spectators. The choice seemed to lie between the crowd and the rocks, but by skilful handling, Mr. Hucks managed to fetch up within 10 ft. of a stone breakwater, which would undoubtedly have got the best of the encounter.

Flying at South Molton.

On Wednesday of last week Mr. Manton looped at the South Molton Agricultural Show. The weather conditions were bad owing to a gusty wind and showers of rain; but Mr. Manton gave five flights, in two of which he looped many times.

Flying at Taunton.

On Thursday, Friday, and Saturday last Mr. Manton gave four exhibitions before small but very enthusiastic audiences. The weather was tropical with little wind but multitudinous remous. Mr. Manton's first loop at Taunton was the 100th in his total. The people of Somerset will not easily forget Mr. Manton's steeplechasing, steep banking, and looping.

Flying at Norfolk.

The Avro seaplane, piloted by Mr. Raynham, visited Hunstanton on Wednesday of last week. Two days' exhibition flying was given, and a number of passengers carried. On Thursday evening Mr. Raynham flew to Cromer. On Friday, thick fog prevailed, and, to the disappointment of many, lasted all day. It cleared, however, at mid-day on Saturday, and Mr. Raynham took a trial trip, but Cromer is not an ideal spot for seaplanes, and a float was damaged by one of the numerous small rocks which are sprinkled on the beach. New floats were fitted during the afternoon, and at 4.30 a splendid exhibition was given.

Mr. Raynham gave another exhibition on Monday, after which he docked the machine for a thorough and much-needed overhaul after the amount of work it had done.

Flying in Yorkshire.

On Thursday last, Mr. Sydney Pickles took the new 80-h.p. Blackburn military type monoplane out for its first test flights.

This, by the way, is the 16th different type and make of machine Mr. Pickles has flown. At about 6 p.m. he made the first straight flight across the Knavesmire at York, and, on returning, Mr. Pickles reported that the machine was flying excellently, the balance being perfect. Then he flew for 10 mins., reaching 2,000 ft. Later, he went to 3,500 ft.

On Friday, Mr. Pickles took up Messrs. Swan, Buss, Riggall and Bramley in turn, and in the evening he started for West Auckland, 60 miles away, with Mr. Riggall, and though carrying a spare 2-gallon tin of castor oil, two portmanteaus, tools, etc., the machine climbed beautifully. After 45 minutes a dense fog was met just after passing Darlington, and a perfect landing was made in a small field at Heighington.

The flight was continued to West Auckland at lunch time on Saturday, and exhibition flights were made during the afternoon. Miss Rena Redgrave, Mr. Davison, Mr. Vart, and Mr. Jackson were all taken for flights.

On Monday, after taking a passenger for a short flight, Mr. Pickles started at 9.30 a.m. for York with Mr. Davison, reaching that city without incident at 10.20 a.m. Later, Mr. Pickles took up Mr. R. W. Kenworthy for 20 mins., circling most round York Cathedral.

Flying at Liverpool.

On Monday of last week Mr. H. G. Melly flew from Waterloo to Altcar and back with a passenger. On the Tuesday Mr. Melly made two journeys to Altcar, again carrying a passenger each time. On Thursday Mr. Melly, on his two-seater, and Mr. Birch on the 35-h.p. Anzani machine, had a race to Altcar and back, after which Mr. Birch gave an exhibition of banking and spiralling.

Mr. Goodden's Flying.

Mr. F. W. Goodden has of late done much remarkably good flying on the Morane (80-h.p. Gnome), formerly belonging to the late Mr. Hamel. At the towns where Mr. Goodden has been giving exhibitions he has been a great success.

The machine has only been put on rail once, namely, from Peterborough to Newtown, in North Wales. Mr. Goodden always puts up an excellent show, doing all the tricks which Mr. Hamel did, and the local papers are full of praise.

At Tunbridge Mr. Goodden made 12 loops and three tail slides in a wind blowing over 60 m.p.h.

He is flying at Chester this Wednesday and Thursday.

The following are some of his recent flights:—Hendon to Brooklands, 20 miles, in 12 mins.; Brooklands to Tunbridge Wells, 45 miles, in 40 mins.; Tunbridge Wells to Hastings, 30 miles, in 16 mins.; Hastings to Bexhill, 8 miles, in 6 mins.; Bexhill to Maidstone, 30 miles, in 29 mins.; Maidstone to Brooklands, 45 miles, in 30 mins.; Brooklands to Luton, 38 miles, in 30 mins.; Luton to Peterborough, 55 miles, in 50 mins.; Newtown to Stoke, 70 miles, in 45 mins.; Stoke to Crewe, 11 miles, in 5½ mins.

Flying at Bognor.

The Anzani-Curtiss flying-boat was out giving passenger flights on Sunday with Mr. Whitehouse as pilot.

A number of naval seaplanes passed by here last week en route for Calshot. One machine, piloted by Squadron Commander Risk, R.N., came down at Littlehampton, about two miles away, owing to engine trouble, and was towed off by a destroyer later.

The hull for the second boat, being built by Messrs. White and Thompson, Ltd., for the "Daily Mail" Circuit, has arrived from Messrs. Saunders, of Cowes. It is a copper-sewn boat and is a very fine piece of work. This boat is being put through first, and it is hoped to have it out on test in about a week's time.—A. B.

School Reports.

Hendon.—AT GRAHAME-WHITE SCHOOL: Instructors: Messrs. Barrs, Howarth and Lillywhite. Pupils with instr on machine: Messrs. Murphy, Stalker and Haines (new pupils). Upton, Liu, Gruning, Courtney, Toolis, Wyles, Courtney. Strts or rolls alone: Messrs. Palmer, Shepherd, Howett. 8's or circs alone: Messrs. Lowe, Shepherd, and Howett. Machines in use: Grahame-White school machines.

AT HALL SCHOOL.—Instructors: Messrs. Clappen and Virgilio. Pupils doing strts or rolls alone: Messrs. Arcier (2),

Brooks (4), Gering (4), Haines (2), Gibson (2), and Miss Clifford (4). 8's or circo alone: Mr. Arcier. Machines in use: Caudron biplanes (35 h.p.). Mr. Hall out looping on Thursday, 50 Avro. New 35-h.p. Caudron flown successfully during week.

AT BRITISH CAUDRON SCHOOL.—Instructors: Messrs. W. T. Warren and R. Desoutter. Pupils doing strts or rolls alone: Messrs. Abbott and Valazzi. 8's or circo alone: Mrs. Buller. Machines in use: Two Caudron biplanes (35 h.p.). Exhibition flights by R. Desoutter.

AT BEATTY SCHOOL: Instructors: Messrs. Baumann and Watts. Pupils with Instr. an machine: Messrs. Allen (17 mins.), Cheung (35), MacLachlan (14), Bentley (27), Elverston (10), Kelly (48), Capt. Bass (20), Lieuts. Maguire (38), and Paterson (22). Strts or rolls alone: Mr. Ruffy on monoplane. Machines in use: 2 Wright biplanes, 1 H. P. monoplane. 3 passengers carried.

Brooklands.—AT VICKERS SCHOOL: Instructors: Messrs. Barnwell, Knight, Elsdon and Webb. Pupils with instr on machine: Capt. Kane (2), Lts. Clemson (5), Gillman (3), Wells (7), Haskins (2), Warrant (2). 8's or circo alone: Capt. Kane (3), Lts. Warrant (4), Gillman (2), Clemson (2). Certificate taken: Capt. Kane. Machines in use: Three school biplanes.

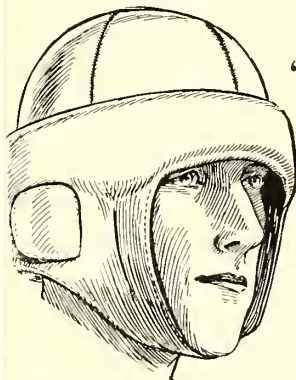
AT BLÉRIOT SCHOOL.—Instructor: M. Jules Teulade. Pupils doing strts or rolls alone: Messrs. A. Crick (6 mins), G. Pitt (18 mins), Lieut-Col. Fraser (12 mins.), Capt. de Villiers (3 mins.), Comte FitzJames (10 mins) on Penguin. 8's or circo alone: Messrs. H. O'Hagan (10 mins.), W. South (10 mins). Certificate taken: W. South, at 450 feet. Machines in use: Blériot monos (25, 28 and 45-h.p. Anzani). E. L. Gower 1 hr 15 mins. cross country on 50-h.p. Gnome.

AT BRISTOL SCHOOL: Instructors: Messrs. Jullerot, Merriam, and Stutt. Pupils, with Instr. on machine: Mr. Collins (8), Mr. Hay, Mr. Lucas (3), Lieut. Sanders (3), Mr. Adamson (2). 8's or circo alone: Mr. Godwin (2), Mr. Treloar (2), Mr. Adamson (3), Lieut. Coles, Mr. Lucas, Mr. Rutledge, Mr. Hay. Certificates taken: Mr. Treloar and Mr. Godwin on July 9th. Machines in use: Three School biplanes

Eastbourne.—AT E.A.C. SCHOOL: Instructors: Messrs. Fowler and Morgan. Pupils with instr on machine: Messrs. Bass-Sutton, Butler, Arnold, and Hardstaff. Machines in use: E.A.C. biplanes.

Liverpool (Waterloo).—AT LIVERPOOL AVIATION SCHOOL: Instructor: Mr. H. G. Melly. Pupil with instr on machine: Mr. Crean. Strts alone: Messrs. Osborn Groves and Crean. Machines in use: Blériot monos.

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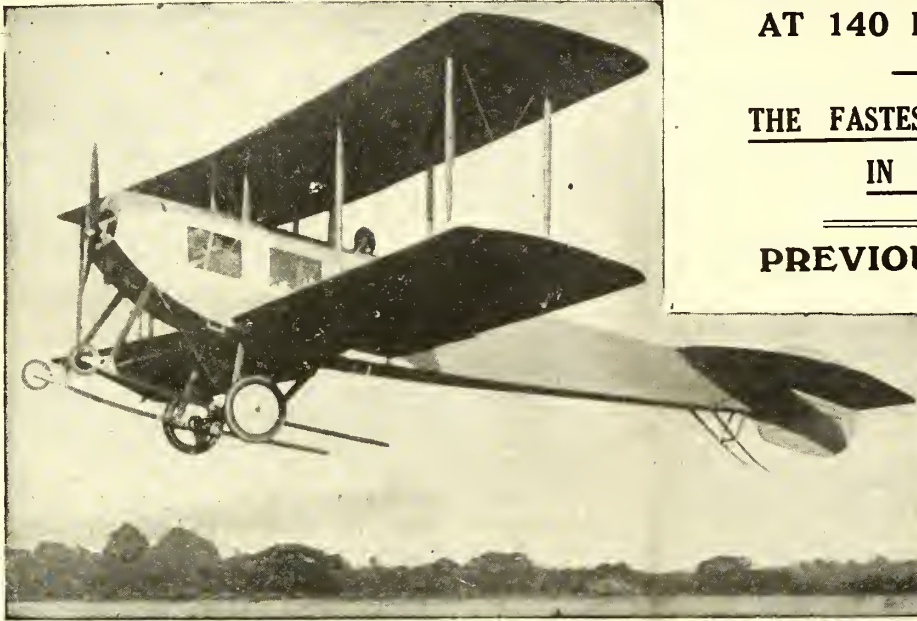
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"THE AEROPLANE," JULY 22, 1914.

THE AEROPLANE



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VOL. VII. [REGISTERED AT THE G.P.O.]
AS A NEWSPAPER.

WEDNESDAY, JULY 22, 1914.

No. 4

COMING HOME.



One of the Short "folders" (160-h.p. Gnome engine) taxiing home to Calshot after alighting in Southampton Water from a trip round the Fleet on Saturday. Note the funnel for the exhaust gasses.

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The Royal Naval Air Service in Being.

For the first time in its brief history the Royal Naval Air Service carried out on Saturday last a job of work as an integral part of the Royal Navy. The programme was that the twenty serviceable seaplanes assembled at Calshot should fly in the early morning to the moorings prepared for them off Haslar, to the north of the ships, and tie up there during the day, while the King inspected the Fleet, flying back round the Royal Yacht and down the centre line of ships in the evening "at a height not exceeding 500 feet," according to orders. This is a nice height at which to exhibit a seaplane, but it is just where the bumps caused by the wind eddying over the ships, and the heat remous off the funnels, would be worst. I have a very distinct recollection of flying through the smoke of a small passenger steamer in a bat-boat at about 250 feet one day last year and of feeling a most complicated thump all over the machine as we hit the smoke trail, and it seems likely that the heat spirals off the funnels of battleships would be very much worse. However, the modern naval aviator does not seem to trouble much about his altitude so long as his machine stays more or less in one piece.

Lest the Air Department at the Admiralty should be suspected of inhumanity it may be well to explain that the seaplane pilots and their passengers were not intended to stop on board their craft all the time. As each machine arrived at its moorings and tied up, the crew was taken off by a picket-boat and conveyed to H.M.S. "Niger," a gunboat of an obsolete type employed as tender to the "Vernon," and more commonly known as the "Nigger"—a name which seems to fit, for her appearance somehow suggests a superannuated negro light-weight boxer. On board the "Nigger," one gathers, there was assembled the staff of the Air Department, come to view its handiwork, of which it may justly be proud, and, as one irreverent pilot put it, "simply bristling with canaries"—a remark called forth purely by jealousy because the supply of the gold eagle badges of the R.N.A.S. is not yet sufficient to go round, so the pilots of the coast defence air stations had not been able to get any and headquarters staff had.

The Air Service carried out its programme to a nicety, though naturally the non-arrival of the King was a grievous disappointment, and one hopes that at the next Review, or Test Mobilisation, whichever it may be, there will be many times the number of seaplanes to be seen, as well as several special aeroplane mother ships and some real airships, for the show made on this occasion should convince even the most hardened disbeliever in aircraft that it is worth while to spend a good many millions on increasing the lead our Naval Air Service already holds over that of any foreign country.

Where the Work Was Done.

Being naturally desirous of seeing how and where the real work of the day was done it seemed good to go to Calshot, whither on Friday evening, accompanied by one Harold Perrin, of the Royal Aero Club, I went by road. There we learned that the first batch of seaplanes was to push off for their moorings at the unholy hour of 5.30 a.m. on Saturday. Now Calshot Air Station is a small place, and the influx of pilots and shore parties from the up-country stations was more than it could accommodate, so a number of officers and men had to put up elsewhere, unless they "went out and stood along the seashore for multitude"—according to the Scriptures. Therefore, having deposited the aforesaid H. P. at Hythe, where he

was to board a lordly yacht and see the Fleet in luxury and idleness next day, I returned to Southampton, where, at the Dolphin hostelry, I discovered numerous and assorted flight-lieutenants who spoke words of wisdom concerning seaplanes, words which would inevitably produce many libel actions if published verbatim. Still, "out of the mouths of babes and sucklings," etc., and some of their criticisms carefully conveyed to the right quarters may assist in improving the breed of seaplanes.

Being, above all things, endowed with common sense, and having the shadow of a 4 a.m. boat to Calshot hanging over them, the pilots went to roost early, and at 3 a.m. the tramp of many feet betokened the beginning of the day's work. Arriving at Calshot by road—a horrible curly road on which extreme caution is recommended—shortly after the boat, I found everyone already hard at work. By courtesy of the officer commanding at Calshot I was allowed to watch the proceedings, and I only regret that the various constructors of aeroplanes, and more especially of engines, were not there also, for they would have learned much to their ultimate advantage.

The Start.

Most of the visiting machines were housed in big Piggott marquees, and a Bessonneau portable shed, all of which seemed to do their work well.

The first to start, due out at 5.30 a.m., was the Isle of Grain "war flight," consisting of Short "folders" with 160-h.p. Gnomes, under Squadron Commander Seddon (Lieut. R.N.). There was some trouble all round in getting the engines to start, one machine being delayed till after 6 a.m. One gathers that these "double-row" engines—i.e., two rows of seven cylinders each—are by no means as satisfactory as the others. Apparently the gas coming in through the crank-shaft is cut off by the first row of connecting rods as they whirl round, with the result that the back row of cylinders gets too much gas and the front row is starved. By skilful juggling with valve setting it has been possible to increase the time for which the engine will run, but it seems that a radical alteration in design is needed. Perhaps outside inlet pipes, as in the Le Rhone, might do it. On the other hand, the 9 cylinder single row 100-h.p. Gnomes are said to give no trouble at all, and to give very high efficiency all round. There seems a feeling, also, that the 100-h.p. is about the limiting size for a rotary engine, owing to the amount of metal whirling round in the bigger engines. A "monosoupape" 9 cylinder the same size as the present 100-h.p. ought to be a useful engine. However, when the engines did get going they made no doubt about lifting the machines when once they got off the water, though, owing to there being a flat calm, the getting off process was somewhat longer than usual.

The next batch to get away was the Dundee flight, under Squadron Commander Gordon (Major, R.M.L.I.). This flight consists of Short tractor bipanes with 9 cylinder 100-h.p. Gnomes. The wings do not fold up, as in the bigger machines, and they are somewhat smaller and lighter all round, but they fly excellently, and seem to lift the standard Admiralty load quite easily. These machines had been living in a Piggott tent at the top of a steep bit of beach, and there was a great deal of work in getting them into the water, but they were away fairly well on time, except for one machine which

cracked a propeller in getting off and came in to have a new one fitted.

The third lot off was the Felixstowe under Squadron Commander Risk (Capt., R.M.L.I.), all on Maurice Farmans, three with 12 cylinder V type 100-h.p. Renaults, and one with a 130-h.p. Salmson—this last being a rebuild of the 1913 Monaco machine flown by M. Gaubert. All four should have been Renaults, but one engine sprung a leak in its crankcase before leaving Felixstowe and could not start. Another came unput on the way to Calshot, but it was possible to get one to replace it.

These engines seem to have given a great deal of trouble in one way or another, and one would like to see one of these "Maurices" tried with a 120-h.p. Beardmore-Daimler, or 120-h.p. Sunbeam—like that on Mr. Alcock's machine at Brooklands, which seems prepared to run for ever—or one of the smaller Salmsons. The 130-h.p. Salmson seems a trifle too big to be quite right for so light a machine, except in the hands of a pilot who has the sense not to use the full power. These "Maurices" appear to fly very well, and the floats do their work effectively. This batch, which was housed in a huge new shed, had an easier beach to get down and up than the others, and they were very smartly handled by their landing-crew. The Felixstowe men have adopted a new kit for the handling of machines in the water, consisting of the regulation jumper and cap on top of white running shorts and sand shoes. The effect is very neat, and much preferable to either bathing suits and sweaters, or rolled up cloth trousers. Even when wet the white shorts do not hamper the men's movements, and they dry quickly. So long as the present unnecessary and clumsy method of launching and landing machines by hand continues in use this seems about the best possible uniform, unless a paternal Government suddenly becomes generous and serves out proper, and well made, and therefore expensive, waders such as fishermen use.

While the Maurices were getting away, the Yarmouth flight, under Squadron Commander Courtney (Lieut., R.N.), all on Henri Farmans with 120-h.p. Gnomes, started at intervals from the opposite side of Calshot "Island," where they had been housed in a big Piggott tent. These machines get off and fly beautifully with 120-h.p. Gnomes (14 cylinders), behaving as lightly in the air as do the ordinary land-going 80-h.p. Farmans. The sprung floats are also good in a slight sea. They are, however, on the light side for really heavy sea work, which demands a larger machine of much heavier construction and therefore much heavier loading to the square foot. One hopes before long to see Mr. Farman tackle the problem of big seaplanes seriously. He has been the pioneer of "pusher" type biplanes for so long that he should produce something really good when he starts on high-powered machines for rough water. Or perhaps Mr. de Havilland, who has now begun his work with the Aircraft Company, will produce the desired "pusher" seaplane which is light enough to be buoyant in the air and yet strong enough to be really safe.

The last flight to leave was the "home" flight under Squadron Commander Longmore (Lieut.-Commander, R.N.). In effect, the Sopwith gun-carrier (200-h.p. Salmson) which the commanding officer was to have flown refused to get off the water, chiefly owing to a defective propeller, but partly because an experimental alteration had been made to the tail and partly because the engine took a fit of sulks, and there was no time left to get things right. It was uncommonly hard lines because Squadron Commander Longmore had had all the work of organising things at Calshot for the other flights, and had superintended the departure of all the other machines that morning, so that by leaving his own start till last he deprived himself of the chance of starting at all. Consequently, this flight was under Flight Commander Bigsworth, who started first on the Short gun-carrier (160-h.p. Gnome), a huge machine which seems able to lift anything, but otherwise does not seem to fly as well as the Short tractors, and appears to me to need more surface aft to counteract the big projecting nacelle and gun. The next off was the Sopwith tractor (100 h.p. Green), which seems to fly very well. It is in fact the same machine which Mr. Hawker flew in the Circuit of Britain last year, but with a few minor alterations. The engine runs like

a clock—not of the American variety—and seems to give plenty of power.

One would like to see a Green of the most modern type tried on a fairly light land machine specially built to suit it, for I have a strong suspicion that it gives more power than some of the German engines about which we have heard so much lately. Also, these German performances have caused a more favourable feeling towards ordinary vertical engines. This feeling has been aided by the good flying of the R.E.'s with Beardmore-Daimlers. Further, I hear from an indirect but reliable source that the Green is doing very well in the Naval and Military Engine Competition at Farnborough. Therefore it looks as if some enterprising aeroplane maker might do well to try and beat a few records with a Green.

The gun on the Short is a 1½-pounder, more or less like to the pom-poms used by the Army some time ago. It is the biggest weapon yet used in aircraft. It was first used on the Sopwith, and later was used to test the Short's ability to stand the recoil.

The last machine to start was the Sopwith bat-boat (90-h.p. Austro-Daimler), one of the most extraordinary craft in the Navy, and quite the most comfortable thing to fly in I have yet come across. The huge hull, the comparatively low power, and the apparently small planes would lead one to expect a clumsy, sluggish machine very hard to get off the water, and awkward to bring down properly. In practice she gets off easily, provided there is not too much sea—for she is small, considered as a boat—and flies very well indeed.

A Night Flying Performance.

On Friday night, just before midnight, Flight Commander Travers had taken this Sopwith bat-boat out over the Fleet. He had an ordinary electric headlight off a car fitted on the bow, and a mass of accumulators as well as a passenger, and with this he flew from Calshot right out to the other end of the Fleet by Southsea, reaching about 1,000 feet as he came to the first ships and getting to 1,500 feet at the other end of the line. This performance rather "wiped the eye" of the airships which are supposed to be particularly the weapons of darkness.

On returning Flight Commander Travers had an experience which demonstrated the use of a self-lighting machine. After leaving the last of the Fleet, at 1,000 feet or so, he started to come down by throttling the engine so that he was just sinking slowly. His dash-board was illuminated as usual and he was taking his height from his aneroid, intending, when it showed he was getting near the water, to alight in the usual way. Suddenly, when the instrument showed a height of 200 feet, there was a bump and a crash and much splashing, and he found himself on the water. What had happened was that, as the aneroid indicated in 200-foot jumps, he had reached the bottom of the last 200 feet before the indicator moved, just as in a taxi one may be on the verge of ticking up another tu'pence without actually doing so. The boat fetched herself up quite easily without a particle of damage, and was moored out for the night, doing her trip on Saturday as well as anything in the air. Before this night-flying business the same machine had taken half-a-dozen or more Naval passengers, one at a time of course, round the Fleet. She is, I think, the oldest machine at Calshot, and certainly one of the best fliers, now that triangular fins have been fitted under the tail and forward of the rudders. Of course, she is too small for real sea work, but a similar kind of machine in a really large size—say a 500-h.p. twin-engine job—is something like the beginning of the real flying ship.

One thing that will be altered in such a type of machine will be the tail-booms. At no time have I liked the idea of a heavy propeller and engine buzzing round inside four little sticks which one could break with one's hands, and in the big, powerful, fast machines of to-day it is positively terrifying to see the tail-booms whipping about when the engines are running on land or water, and it is not good for one's nerves to watch them when in the air, for some of them bend visibly when the rudders are put full over. If the "canard" type does not come, or until it comes, and pending the arrival of the big twin-engine "pushers" with central fuselages, something might be done by fitting a very deep and very narrow


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box-girder on each side of the propeller, instead of tail-booms, which girders would be much stronger, and, if placed parallel to one another and covered with fabric, would act as fins, thus serving a doubly useful purpose. They might weigh more than the present tail-booms, but they would have much less head resistance. Still, the ultimate type seems to be one with twin or multiple propeller or tractor power plants along the wings, and a fuselage in the Sikorsky style. And these big machines will be inherently stable.

Round the Fleet.

The officer commanding at Calshot had thoughtfully arranged that after the departure of the last machine half-a-dozen ratings from each flight were to be allowed to take a trip round the Fleet in a tug-boat which was acting as tender to the air station, so as to give the men an opportunity of seeing their seaplanes as an integral part of the Navy's fighting force, and the same officer very kindly offered me a passage in the tug. Having driven a couple of hundred miles since the previous morning and being still in 4 a.m. rig, I was hardly a presentable object, but, disguising myself as a member of the crew of the tug by the simple process of remaining as I was, I managed to escape recognition by any respectable friends I may have had in the Fleet, and in the course of the trip learned much about our fighting ships from the officers who were on board the tug. The assemblage of ships was a most impressive sight—the more so because it was a monkey-jacket inspection and not a full-dress cocked hat review, for the ships and their officers looked the more business-like. It has been so fully described by every newspaper that I need not add another description. As our disreputable tug rolled happily down the lines of big ships it seemed to cause something of a sensation, for no one in the Fleet could possibly explain a party of sailors and marines apparently "joy-riding" round the lines when everybody was supposed to be very strictly on duty in expectation of the King's inspection. We had no flag, and, fortunately, no signaller on board to read any rude remarks which may have been made to us, so I suppose we remain unexplained to this day.

Ultimately we found our seaplanes, and the "Nigger," from which ship we were hailed by megaphone. With all sorts of horrible qualms we stopped our engines, wondering what offence we had committed. Then we were told that the King was not coming till the evening. "I bet that's Ulster," said

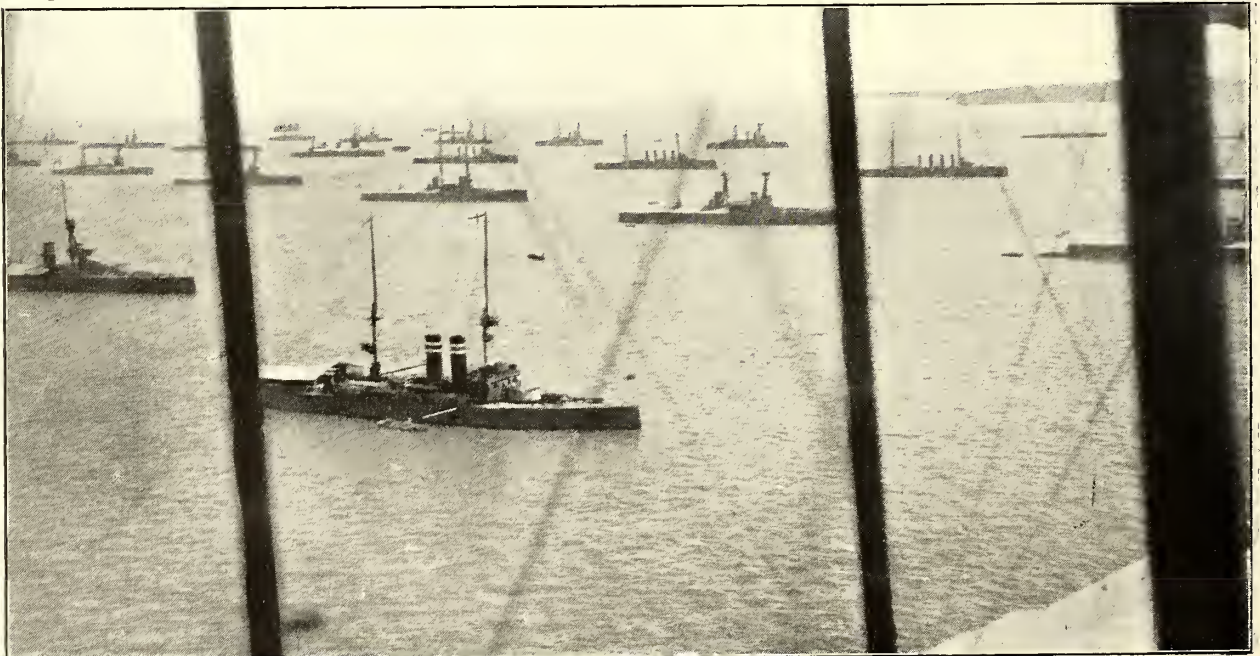
the Lieutenant in Command. "To Hell wi' the North," remarked a Kerry accent alongside me. And we had to hustle back to Calshot, thence to report when the shore parties were ready to land the seaplanes, which were then all riding comfortably at their moorings, despite the rising wind and some little sea, though I noticed that the floats of some appeared to be lower in the water than they ought. This float problem is going to give trouble for some time to come.

Then we rolled home again down the lines of ships, which seemed each to have an enormous influx of feminine visitors; in fact, it seemed a regular day out for the sisters and cousins and aunts of the Navy. Which reminded a person on board the tug of the American girl on a U.S. warship who said to an affable young officer who was showing her round: "Say, Lootenant, this is vurry inter-resting; but there don't seem to be any powder on board." To which the lieutenant replied: "Madam, we keep all sorts—face, gun, stomach and bug." These Americans do lack the finer art of conversation.

The Return.

Soon after we got back to Calshot the seaplanes began to arrive, a Maurice Farman first, whose pilot explained scornfully that "A" Flight was still busy cranking up its 160's. Then the rest followed in any sort of order, some pilots coming straight home, and others going round to impress the Fleet. One anxious Squadron Commander expecting his fourth tractor home, remarked that he expected young — was now standing on one wing-tip vertically over the biggest flagship he could find. Another, seeing a pusher biplane arrive at 2,000 feet over Calshot and proceed to descend in a small corkscrew spiral, heaved a sigh of relief and murmured, "Reggie returns to his sorrowing family." Certainly the way most of the pilots came in showed that they have very little to learn about handling their machines, either in air or on water. In spite of a 30-mile wind blowing dead sideways, one pilot came in dead opposite the landing trolley, and opening up his engine at the right moment shot clean out of the water onto the trolley, a very pretty piece of work.

All landed without damage of any kind, and the total casualties of the day were one passenger who fell off a float when getting into the boat which was to take him aboard the "Niger," and a most staid and respectable young officer who "fell into the ditch,"—to use the current Naval phrase—out of a picket-boat when leaving the "Niger," though some assert



Part of the Fleet on Saturday, taken from an aeroplane.

that he was pushed out in the course of a feud with a sea-soldier.

In the interval between the arrival and departure of the seaplanes several officers of the Air Service made a tour of the Fleet by boat, and, I gather, were something of a puzzle to the older officers of some ships who could not account for beings who were Naval officers as to their upper halves and then descended to riding breeches and puttees.

When starting back one pilot caused some sensation by getting up to 150 feet or so with his passenger calmly standing on a float hauling in a line, after which he climbed back into the nacelle. Apparently there is no need to flemish down rope-ends before getting under way with a seaplane any more than with any other craft.

When the last seaplane had returned to Calshot we saw a couple of land-going aeroplanes disporting themselves over the Fleet at a great height, these apparently being some of Wing-Commander Samson's machines from Eastchurch, temporarily in camp at Hilsea, and as I left Southampton for London the people were gazing down the Water to a point some seven or eight miles away where a large silver sausage—presumably the Parseval—cruised low down. As we were going out through the Fleet on the tug we had seen a fat

brown shape and a small silver one tied up under the lee of some trees, and judged them to be the "Delta" and "Gamma," respectively, moored at Fort Grange, and it had been arranged that the Astra and Parseval should fly over from Hoo and Farnborough. I gather that all made flights when and as wind and weather permitted. But the seaplanes, as was right and proper, for the Royal Naval Air Service, had pride of place, and a very good job they made of their part of the show. One is glad to see that the daily papers recognised the fact, though they made a woeful hash of the details. The "Times," despite a "Special Correspondent" on the "Niger," omits all mention of the Salmson-Farman, as well as of the Green-Sopwith—the only all-British machine.

Exigencies of the Press—bless 'em—prevented me from seeing Monday's performance, but Saturday's doings alone were enough to give one some idea of what the infant Air Service will become in the not far distant future. I tender herewith my sincere thanks to all those at Calshot for a very interesting and highly educative day, and for much kindness and hospitality. May they all live to become Wing Captains, and retire in the fullness of years with large pensions and many honours as is the due of the makers of the Navy's new Military Branch.—C. G. G.

The Royal Aero Club.

The "Daily Mail" £5,000 Circuit of Britain race will be open from 6 a.m. on Monday, August 10th, 1914, the starting place being Southampton Water. The following are the entries, with the official numbers to be displayed on each aircraft:—

- (1) Sopwith Aviation Co., Ltd. (Pilot: Victor Mahl.)
- (2) Wm. Beardmore and Co., Ltd. (Pilot to be nominated.)
- (3) Sopwith Aviation Co., Ltd. (Pilot: C. Howard Pixton.)
- (4) Grahame-White Aviation Co., Ltd. (Pilot to be nominated.)
- (5) Eastbourne Aviation Co., Ltd. (Pilot: F. B. Fowler.)
- (6) White and Thompson, Ltd. (Pilot: Capt. Ernest C. Bass.)
- (7) A. V. Roe and Co., Ltd. (Pilot: F. P. Raynham.)
- (8) Blackburn Aeroplane Co., Ltd. (Pilot: Sydney Pickles.)
- (9) White and Thompson, Ltd. (Pilot: A. Loftus Bryan.)

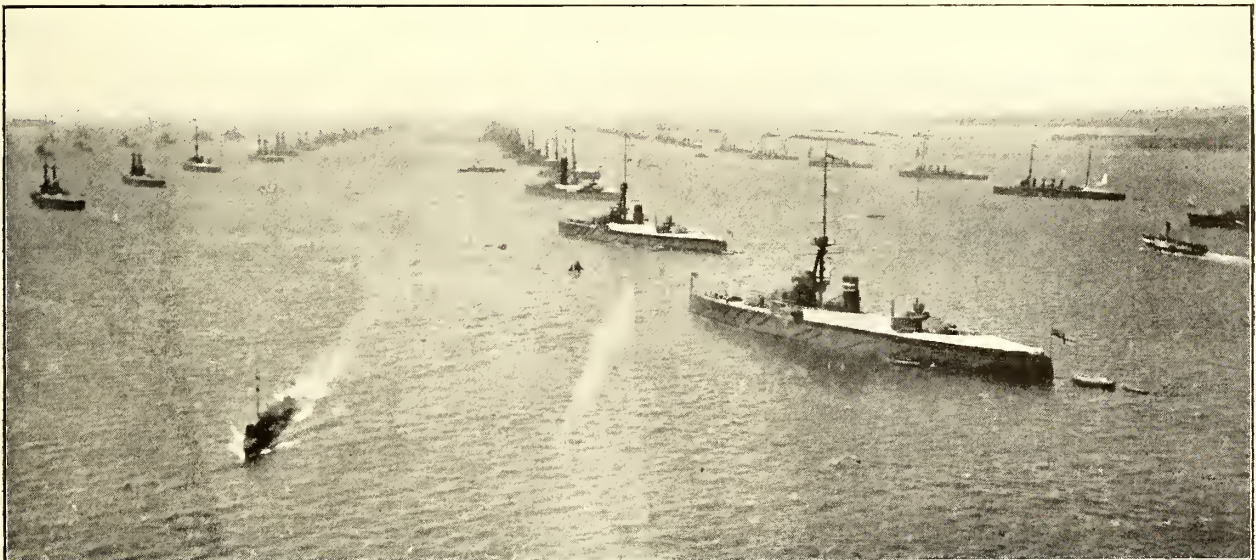
The official controls have been fixed as follows:—Southampton (starting place), Ramsgate, Yarmouth, Scarborough, Aberdeen, Fort George, Oban, Kingstown (Dublin), and Falmouth.

The Royal Motor Yacht Club has kindly postponed the moving of the "Enchantress" until Monday evening, August 10th. Members wishing to witness the start of the race on Monday morning may do so from the "Enchantress." A number of cabins are available for the week-end commencing August 8th, and members wishing to stay on board are requested to

apply to the Secretary of the Royal Aero Club at the earliest possible moment.

SCARBOROUGH.—On July 9th Mr. H. E. Perrin visited Scarborough and had a conference with the mayor and several members of the Corporation regarding the arrangements for the control at Scarborough. The details for the control of the boats in the harbour were discussed, and the following committee was appointed to take in hand the local arrangements:—The mayor (Mr. C. C. Graham), Councillor G. W. Tindall, Councillor F. P. Morgan, Mr. R. Cole, Mr. W. E. Nichol, and the town clerk (Mr. S. Jones).

FALMOUTH.—On July 18th Mr. Perrin visited Falmouth and met the officers of the Royal Cornwall Yacht Club and the Mayor of Falmouth. The alighting place was fixed, and the following committee was formed to take in hand the local arrangements:—Sir Francis Layland-Barratt, Bart., Commodore, Royal Cornwall Yacht Club; Col. Falkner Brown, Vice-Commodore, Royal Cornwall Yacht Club; Mr. R. R. Appleby, Rear-Commodore, Royal Cornwall Yacht Club; Mr. Claude Foster, chairman, Royal Cornwall Yacht Club; Mr. Arthur W. Chard, J.P., Mayor of Falmouth; Alderman F. J. Bowles, Superintendent of the Falmouth Dockyard; Capt. E. J. Nicholls, Dock Master; Capt. G. Green, Harbour Master; Mr. R. G. Borne, Local Secretary.



Another view of the Fleet, taken from an aeroplane on Saturday last.

The N.P.L. on Propellers and Wing Stresses.

BY W. H. SAYERS.

Report No. 82 in the Report of the Advisory Committee deals with tests on model propellers, and is introduced by certain remarks on modifications made in the dynamometer used on the whirling arm for these experiments.

A series of experiments on a pair of model propellers supplied by M. Ratmanoff are then described. These two propellers were of identical diameter, pitch, and blade area, but differed somewhat in blade section, one having a flat pressure face and the second a hollow pressure face. Experiments were made with the propellers moving forward at 1,800, 2,200, and 2,600 feet per min., and it was found for both propellers that the efficiency at a given slip was independent of the forward speed.

Both propellers reached their maximum efficiency at a slip of 24 per cent. The highest efficiency of the flat-faced propeller was 68.5 per cent., and that of the hollow-faced one only 65.5 per cent., but up to about 15 per cent. slip the hollow-faced propeller gave slightly higher efficiencies. At any given speed and slip the hollow-faced propeller gave slightly higher thrusts than the flat one, but also required a larger torque, and, therefore, a greater horse-power to drive it. On the other hand, on a static test the flat-faced propeller gave higher thrusts and absorbed a smaller power.

A further series of experiments was then made to check the theory, due to Lanchester and Drzewiecki, that a propeller might be regarded as a series of short sections of an aerofoil, and that the forces acting on each section of the blade are the same as those on an aerofoil of similar section moving at the same speed and angle of attack.

A propeller was designed and made of a blade section derived from an aerofoil which gave its best lift to drift ratio at an angle of 4 degs. The blade faces formed a true helix of 1.5 ft. pitch, but the two blades were separate, and were mounted on a boss in such a manner that they could be rotated so as to vary the effective pitch. With the blades set so that both faces lay on the same helical surface, if the propeller was given a forward speed of 1.5 feet per revolution (i.e., 1,500 ft. per min. forward speed for a rotational speed of 1,000 r.p.m.) the angle of incidence of the whole of the blade was 0 deg. If now each blade was rotated through 4 deg. under the same speed conditions, the angle of attack throughout became 4 deg. Similarly, if rotated 8 deg. or 12 deg. the angle of attack became 8 deg. or 12 deg.

Obviously, if the theory is exactly correct, this particular propeller should give its maximum efficiency when the blades were rotated through 4 deg. at a speed of translation of 1.5 feet per revolution.

The results showed that the propeller with the 4 deg. rotation of the blades gave its maximum efficiency at very nearly that ratio of forward to rotary speed, but that the best efficiency obtainable was reached with the blades rotated through 9 deg. This highest efficiency was obtained at a different ratio of forward speed to rotary speed, however, and not at that corresponding to 9 deg. angle of incidence.

At any other forward speed than 1.5 ft. per revolution the angle of attack of the blades was not uniform throughout, and actually the angle of attack of the outer and more important half of the blade under the conditions of maximum efficiency varied from 3 deg. 36 min. to 4 deg. 56 min., while those of the inner half were smaller. Since the inner sections were necessarily much thicker than any aerofoil then tested, and might well give their best lift to drift ratio at a quite different angle to 4 deg., this result actually shows a very fair agreement with the theory.

In order further to check the theory, a series of aerofoils were made from the same templates as the propeller blades, and were tested in the wind channel. These showed that the inner sections did give their best lift to drift ratios at a smaller angle than 4 deg. From the results of these tests the performance of the whole propeller was calculated, allowances, also determined in the wind tunnel, being made for the drift, etc., of the boss.

These calculations were made for all the different conditions

under which the propeller had been tested, and the calculated results were compared with the observed ones.

It was found that except for very low slips the calculated efficiency was always lower than the observed efficiency. For the propeller with the blades in the zero position (the propeller with the true helical face) the calculated thrust was rather higher than the true thrust. For the propeller with the blades rotated 4 deg. the calculated and observed thrusts agreed fairly well, and for those where the blades were rotated through 8 deg. or 12 deg. the observed thrust was higher than that calculated.

The discrepancies between the calculated and the observed values may be ascribed to a variety of causes, such as the fact that the flow round a narrow section of a blade having a differing section at a different angle on each side of it may be affected by that on the sections around it, and that the speeds of the actual propellers will be much higher than the speeds obtained in the wind channel. Also, there must be a considerable centrifugal force on the air in contact with a rotating propeller which is likely to alter the air flow considerably.

Notwithstanding the apparently considerable divergencies between theory and fact, the theory appears to be distinctly useful for designing purposes, because, although there are quite large differences, at a given speed of forward motion and a given slip, between the calculated and the actual thrust a quite small change in the slip will make the needed alteration in thrust.

Thus, in one case, a propeller designed by theory to give a particular thrust at 1,150 r.p.m. would at that speed actually give a thrust 9.3 per cent. less than that calculated. But the torque would also be less, so that a motor with a h.p. sufficient to drive the calculated propeller at that speed would actually turn it considerably faster, and at a speed of 1,176 r.p.m., the required thrust would be reached with a slightly lower motor horse-power.

Consequently, with a certain amount of care the method of designing propellers by considering them as being composed of a series of short sections of aerofoils may be used with fair success, particularly in cases where a propeller of known performance is to be modified to give a somewhat different result—but it is obvious that further research is necessary before it can be considered as rigorously accurate.

It is worthy of note that in this report all slip calculations are based on what the N.P.L. call the "mean experimental pitch." This is determined by driving the propeller at a certain number of revolutions per min., and then driving the whirling arm round till the propeller reaches such a forward speed that it gives no thrust. This forward speed divided by the revolution speed is the mean experimental pitch—which corresponds to the angle of no lift of an aerofoil.

Wing Stresses.

Report No. 83 deals at considerable length with the calculation of stresses on wing spars. A series of equations are given by which the bending moments in a continuous spar may be accurately determined if the points of support move out of line when the spar is loaded. As the equations are somewhat complicated, and as the actual loading can only be determined approximately, simpler methods of obtaining the results to a reasonable degree of accuracy are suggested. The methods applicable to both monoplane and biplane structures are given in some detail, including cases of spars where the points of support do not lie on a straight line, and for cases in which a wire is broken.

A numerical example is worked out for an undistorted spar, for the spar convex upwards, concave upwards, and for the spar with S-shaped curves in it, one with the wing-tip bent downwards, one with it bent upwards, and for two cases of a broken wire.

In this particular case, with the undistorted spar, the maximum stress in the fibres was 1,034 lbs. per square inch under normal loading. This spar was supported at the body and at three points along the span, and had an overhanging tip. With displacements of the two inner wire fixings $\frac{1}{4}$ inch upwards

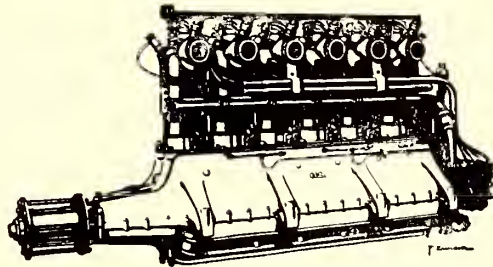
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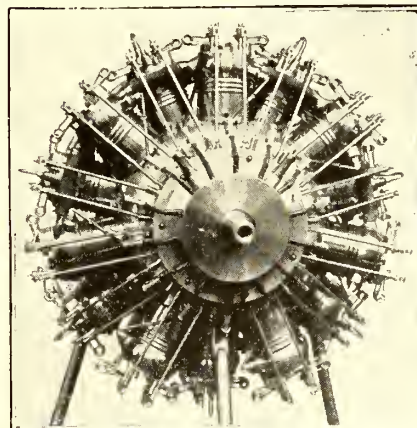
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the bending moments and the stresses were increased by about 15 per cent. With a similar displacement of these points downwards the stresses are reduced by a similar amount. With the S-shaped distortion the stresses are considerably increased, and with the same maximum displacement of $\frac{1}{4}$ inch in the points of support the maximum stress may rise to 1,700 lbs. per square inch. With the end wire broken the maximum stress rises enormously, in this case the maximum stress would rise to 5,400 lbs. per square inch, while the breaking of either of the inner wires would give a maximum stress of about half this value.

These facts indicate the necessity of an extremely high factor of safety for all wing wires and their attachments, and also

that it is necessary to allow an appreciable margin for distortion of spars due to stretched wires.

This report is important and of considerable interest.

Fabric Stresses.

Report No. 84 deals with the stresses in the fabric covering wings and on the attachments of the fabric to the ribs, and shows that the stresses are small compared to the strength of ordinary fabric.

Appended to this is a note, Report No. 85, by Mr. Mervyn O'Gorman, relating to certain tests of fabric on wings which showed that the attachment of the fabric to the ribs gave way long before the fabric failed, and describing a method of sewing the fabric to the ribs which gave excellent results.

The Fort Grange Accident.

It is with great regret that one records yet another fatal accident to an officer of the Royal Flying Corps. On Monday last Lieut. L. C. Hordern, No. 5 Squadron R.F.C. (the Lancashire Fusiliers), was flying a Henri Farman (80-h.p. Gnome) at the new station at Fort Grange, Hants, with Sergt. Campbell as passenger. At a height of 300 feet the engine stopped, and the pilot descended in a spiral glide to 80 feet. From that height the machine came down out of control, and apparently turned a cartwheel on the left wing. Mr. Hordern was so severely injured that he died in hospital shortly afterwards. His passenger was only slightly injured about the head, being saved more serious damage by the safety helmet he was wearing.

The late Mr. Hordern was a flier of considerable ability, though not of very long experience. His certificate, taken on a Deperdussin at Hendon on March 18th, 1913, was No. 440. His seniority as Lieutenant in the Army was of April 22nd, 1905, and in the R.F.C., Nov. 14th, 1913. He was only married about three months ago. To his relations and to his young widow one offers the respectful sympathy of all concerned with aviation.

The Accident.

This is the first fatal accident which has occurred in this country on a propeller-driven biplane of the 80-h.p. H. Farman type, and it seems very hard to account for it. An account in the "Morning Post" says that apparently the rudder went wrong; on the other hand the "Times" correspondent says that the machine presumably lost flying speed. The former explanation hardly seems a likely one, in view of the brutal

treatment to which standard Farman machines stand up successfully every day—unless, of course, the rudder had been damaged and repaired in some Government establishment instead of by the makers.

Both accounts agree that some men of the Naval Airship Section, who were on the ground, had a narrow escape of being crushed by the machine when it fell, and it seems more than probable that in endeavouring to prolong his glide and avoid these men, Mr. Hordern simply stalled the machine and side-slipped, much as Mr. Gill did a week earlier at the same station when the engine of his Sopwith gave out in rising, and he found himself in a place where landing was impossible.

The fact that Mr. Hordern's passenger escaped practically unhurt, shows that the fall cannot have been a very bad one, and it revives again the whole question of sitting in front of the engine, for it seems certain that if there had been an engine in front Mr. Hordern would have escaped. The whole answer to this is that for certain military purposes, especially where a fire-arm of any size is to be used, it is necessary to sit in front of everything. Also, on the whole, it is safer to sit in front on a machine which really flies well, and is under full control, and is well and conscientiously built, than it is to sit behind on a machine which flies badly, or may fall to pieces in the air. Presumably, however, even the maker who is proudest of his own products will admit that there is still room for improvement in machines of all types and makes at present existing, and one can only hope that ere long it will be possible to prevent fatalities resulting from what should by rights be only minor accidents.—C. G. G.

Aviation in Germany.

Various interesting information has reached this office of late concerning aviation in Germany, where, as readers of this paper now know, flying is progressing more rapidly than in any other country in the world.

One friend writes that of the German machines he has seen so far the one with the most original points is the A. E. G., built at Tegel, near Berlin, by the Allgemeine Electricische Gesellschaft, which is allied to the General Electric Company, well known here. Their last machine is a tractor biplane with folding wings which from a state of being all ready to fly can be folded up in less than four minutes. The arrangement is exceedingly neat and everything fits into place without trouble. When folded up it is designed to fit into the standard German covered railway truck, into which it can be pushed straight away without any further dismantling.

With the machine are supplied an axle and a pair of swivelling wheels which fit onto the tail end of the fuselage so that it can be pulled along a road by a horse or by a car. Hooks are fitted to the axle ready for the traces. One of these machines has on test been towed at an average of 30 miles per hour for two hours behind a car. On the front of the landing skid is a small wheel which can be taken off and fitted to the tail by means of a tube and fork which is carried on the machine, so that in the event of a forced landing the machine can be conveniently towed to any suitable place if it is impossible to get off again. Everything about the machine is excellently finished and fits perfectly. The main cables between the wings are held by clips, which can be instantly undone. A small but notable item is that in the

observer's seat in front of the pilot is a desk fitted with drawers for paper and pencils and an arrangement for holding down the paper when writing.

The engine, a 100 Mercédès, is so fitted under a bonnet that the whole of either side can be laid bare at once just like a car engine. The throttle and spark levers are good, solid fittings instead of the trumpery affairs so often seen, and the whole machine is enormously strong. Twelve of these machines are on order for Austria and the tests demand that they shall be towed over any place where a field-gun can travel.

The firm has a fine flying ground of its own and trains nothing but Army officers. No civilian pupils are taken. A contract has been made with the Government to put 120 officers through their tests in two years and the fees paid by the Government are sufficient to permit of the firm providing every comfort for the pupils, who live in a large country house on the edge of a lake near the flying ground, and have on the ground itself a luxurious club-house with writing-rooms, smoking-rooms and so forth.

The Albatros firm is reported to be very busy, as there are something over 300 men employed. This firm is now making only one type of machine, a tractor biplane constructed almost entirely of wood, as seen in the machine which was in this country recently. This firm has evolved a neat device for testing cables while flying, the strains being registered on a chart. The instrument is an arrangement of pistons connected by oil-tubes to the indicator. This instrument is said to be a considerable advance on the cable-tester devised by the Royal Aircraft Factory.

Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," July 17th, 1914.

War Office.—Regular Forces: Establishments: Royal Flying Corps (Military Wing).—The appointment of Lieut. Leslie Da C. Penn-Gaskell, 3rd Battalion Norfolk Regiment, as a flying officer is ante-dated to February 26th, 1914, but without pay or allowances prior to March 18th, 1914.

NAVAL.

The following promotion was announced at the Admiralty on July 16th:—Commander F. R. Scarlett has been granted acting rank of captain, with seniority of July 14th. (Captain Scarlett is Inspecting Captain of Aircraft and is in charge of the Central Air Office.)

* * *

On Monday of last week the following officers left Eastchurch for Portsmouth:—Wing Commander Samson (B.E. No. 50), Squadron Commanders Courtney (Bristol No. 153) and Davies (Avro No. 150), Flight Lieutenants Osmond (B.E. No. 49), Marix (Sopwith No. 104), Littleton (Sopwith No. 103), Young (Short No. 64), and Draper (Maurice Farman).

Lieut. Littleton landed some little distance away with a leaking petrol-tank. Lieut. Newton Clare went to his assistance and damaged his machine on landing. Squadron Commander Spenser Grey, with Staff-Surgeon Hardy-Wells as passenger, then flew to the rescue on Short No. 152. Lieut. Littleton returned to Eastchurch and proceeded on Avro No. 41.

On Tuesday, Short No. 152 (sociable, 80 h.p.) made a number of flights. On Wednesday, Shorts Nos 2 (50 h.p.) and 152 were flying. On Thursday, Shorts Nos. 152, 34, and 3 and Caudron No. 45 (50 Gnome) were out. On Friday, Short No. 62 (50 h.p.), and on Saturday, Short No. 3, were the only machines out.

* * *

Preparations at Yarmouth for the Calshot Review were rudely interrupted on Wednesday, July 8th, by the news that the "Enchantress" was taking the First Lord of the Admiralty north, and that he would visit the Naval Air Station at Yarmouth at the somewhat unusual hour of 6 a.m. the following morning.

The "Enchantress" anchored in the roads during the night, and about 6.30 a.m. the First Lord landed from a pinnacle and was met by Squadron Commanders Gregory and Courtney and the officers of the Air Station. He inspected both the Air Station and the Coast Defence Station (which belongs to the R.N.A.S.), and was back on board the "Enchantress" and steaming before 8 a.m.

On Friday last a number of Naval officers of all ranks, selected from the Fleet, visited Calshot and flew in the afternoon with officers of the Royal Naval Air Service.

About midnight on Friday Flight-Commander Travers, R.N., on the Sopwith bat-boat (90-h.p. Austro-Daimler) flew over the Fleet at Spithead, the machine carrying an electric headlight. His height varied between 1,000 and 1,500 feet, and the machine behaved with perfect propriety till in descending it alighted unexpectedly while the aneroid still showed 200 feet. No damage of any kind was done.

On Saturday morning at 6 a.m. the Grain flight (160-h.p. Short folders) left Calshot for the moorings at Fort Monkton, followed in turn by the Dundee flight (100-h.p. Shorts), the Yarmouth flight (120-h.p. Henri Farmans,) the Felixstowe flight (3 100-h.p. M. Farmans and one 130-h.p. M. Farman), and the Calshot flight, consisting of the 160-h.p. Short "pusher" with a pom-pom in the bows, the 90-h.p. Sopwith bat-boat, and the 100-h.p. Sopwith tractor. The pilots and passengers went on board H.M.S. "Niger," where Captain Murray E. Sueter, C.B., Director of the Air Department, Captain F. R. Scarlett, Inspecting Captain of Aircraft, and the staff of the Air Department had established themselves. On receipt of the announcement that the King would not arrive till 5 p.m., and would not inspect the Fleet that day, the seaplanes returned to Calshot, where they were inspected in the evening by the First Lord of the Admiralty.

On the arrival of the King at Portsmouth at 5 p.m. on Saturday, the Naval airships No. 3 (Astra-Torres) from Kingsnorth, and No. 4 (Parseval) from Farnborough, flew over the Fleet. The Delta, which had been moored under the lee of some trees at Fort Grange, also made an appearance, but, apparently, the wind was too strong for the Gamma, which remained moored at the same place.

During the same period some fine flying at considerable heights was done by the land-going machines of the Royal Naval Air Service, which had been camping out at Hilsea, near Portsmouth. These included Sopwiths, Bristols, Shorts, an Avro, and Hewlett-Blondeau-B.E. type biplanes.

On Monday, as the Fleet left Spithead past the Royal Yacht, a number of seaplanes from Calshot and some land-going machines from Hilsea flew over it, encircled the Royal Yacht, and returned to their respective stations.

MILITARY.

No. 6 Squadron has returned to Farnborough temporarily, as the old prison at Dover where they were to have been housed has been condemned, and wooden huts are being built to accommodate them. It may be a few months before they are settled down there.



A Maurice Farman taxiing in past one of the South African boats after returning from its trip round the Fleet on Saturday. Note the passenger on the windward wing to keep it down when turning on the water.

The machines of No. 2 Squadron reached Scarborough on Friday and left next morning at 8.30 a.m. With three exceptions all reached the aerodrome at Montrose safely about midday. A stop was made at Berwick for petrol and oil.

The first pilot to arrive was Capt. Waldron, who alighted at 12.40 p.m., Capt. Todd and Dawes, and Lieuts. Dawes, Martyn, and Harvey-Kelly arrived at short intervals. All reported an unpleasant journey with fog and rain.

Major Burke came down at Essington, County Durham, with engine trouble. Lieut. Noel came upon a bank of fog in Fifeshire about 12.50 p.m., and while descending to get his bearings he struck a stone wall on a hillside and the machine was so damaged that it was dismantled and transported to Montrose. Mr. Noel escaped unhurt. Lieut. Corballis also had a narrow escape near Carnoustie, when the throttle control wire broke, and in landing in a small field he hit the fence, breaking the lower plane. Mr. Corballis and his passenger, A.M. Moody, escaped unhurt, and spare wings were despatched from Montrose to the scene. The machine will return to Montrose early in the week.

The transport section arrived in Montrose barracks safely about midday on Sunday. A long line of dusty motors, looking as if they had been on active service. The mechanics are generally very glad to be back to the attractions in Montrose, where the huge crowds of visitors view them as heroes.

* * *

Officers of the Royal Flying Corps are desirous of knowing what height was actually reached by Mr. Norman Spratt when he beat the British Height Record some months ago. It is nearly time the barograph records were officially published, so that others may know what they have to beat.

FRANCE.

Caudron Frères have recently completed an armoured biplane for the French army. This machine is practically a standard 80-h.p. Caudron with an armoured nacelle. The engine is completely protected, and the extra weight of armouring reduces the machine to a single-seater. The machine has given highly satisfactory results on tests, and the French Government have entered into a contract which binds the French firm not to build these machines for any other Power. It is understood that the British Caudron Co. has the right to build this type for the British Government. The armoured machines are in-

tended by the French to be used in co-operation with artillery as fire-controllers. The faster type Caudrons with unarmoured fuselages of monoplane type are being bought by the French army for use with cavalry scouts.

Between June 10th and 30th escadrille No. 18 of Dijon, consisting of Captain Boucher, Lieut. Escot, Lieut. de Bondz, Adjutant Guidon, Quartermaster Nautet, Sergt. du Tremblay, and Corporal Andal, all on Blériot monoplanes, totalised 13,500 kms., each aviator having flown a little over 2,000 kms. From June 20th onwards, the escadrille carried out reconnaissance work on the Eastern Frontier, Staff officers being carried as observers, and from June 28th to 30th the following journey was made by all the machines:—Mailly, Nancy, Lunéville, Toul, Verdun, Mézières, Maubeuge, Saint-Omer, Dunkerque, le Crotoy, Saint-Cyr.

On July 10th a fatal accident occurred at Bétheny. Corporal Mirat, of Reims, with Corporal Godefroy as passenger, was making a test flight when his monoplane side-slipped on a turn and struck the ground. The passenger was pierced by the broken steel tubing and killed, but Mirat was extricated from the wreck bruised all over, but not seriously hurt.

Twenty armed two-seater biplanes took part in the military review at the Hippodrome at Longchamp on July 14th.

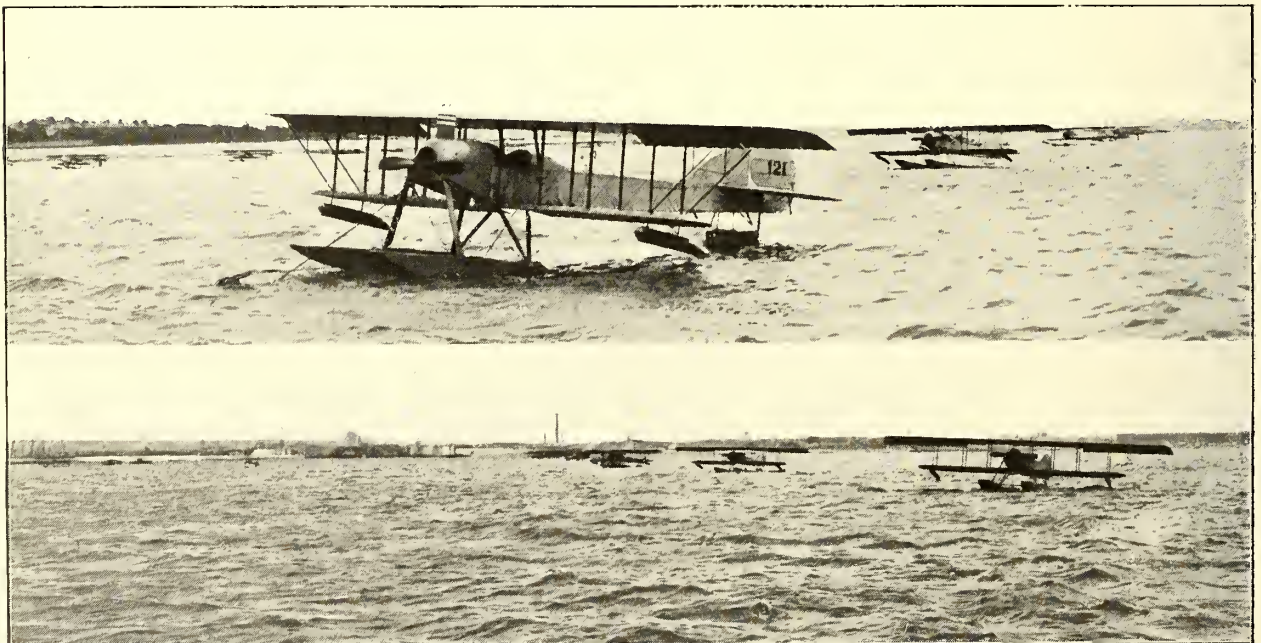
On July 14th Lieut. Chevrier, flying from Toul to Lunéville, was compelled through engine failure to land at Ainville. In doing so he smashed his machine but escaped unhurt.

On July 16th, Lieut. Brûle flew from Paris to Pau on his tandem Blériot in 7 hours. He was brought down at Poitiers by a backfire in his carburettor, but he continued his journey safely.

On July 16th an aeroplane belonging to the Belfort escadrille was manoeuvring with the 171st Regiment, flown by Lieut. Trétarre, with Captain Hoquet of that regiment as observer, when the wind got the upper hand and drifted them over the frontier. They landed 20 kms. north of Mulhouse (Alsace).

Caudron escadrille No. 2 has completed a period of instruction at Sissonne, where reconnaissance experiments have been conducted with General Staff officers as observers. During 12 days, the six Caudrons covered over 5,940 miles in the north-east of France without the least breakage.

A new type armoured Maurice Farman was submitted to reception tests for the French army at Buc on Saturday last. Fitted with a 70-h.p. Renault motor, this machine, carrying



MOORED OUT.—The seaplanes of the Royal Naval Air Service moored out off Haslar Sea Wall on Saturday last. The Short "folders" in the foreground, and Henri Farmans further inshore.

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pilot, passenger, and four hours' fuel and oil, climbed to 500 metres (1,640 ft.) in 5 mins. and flew at 107 kms. per hour (66 miles per hour).

The French War Ministry has invited the German manufacturers of aerial engines to take part in the competition for such motors arranged by the military department in the autumn. Four German firms have received the invitation, among them being the Daimler and the Argus works.—B.

Plans are being made to create an aerial fleet to co-operate with the combatant portion of the French navy. The new fleet will be controlled by a central department at Paris and will involve the establishment of a number of naval airship stations, and of a central and several subsidiary seaplane docks. The central department at Paris will be in command of a naval officer of high rank, and he will have under him a technical and administrative staff. The central seaplane station will probably be situated at Fréjus.

A French naval commission is at present in Corsica to select a site for a naval air station. It is expected that Bonifacio will be selected.

Morocco.

On July 14th General Baumgarten passed the garrison at Oudjda in review. During the inspection and the march past of the troops the Saharan escadrille flew overhead.

The Saharan escadrille is not wasting its sweetness on the desert air. Quite recently a punitive expedition was sent against some rebels in Taza, who had entrenched themselves in an inaccessible position on the mountain side. The infantry could do nothing against them, so General Gouraud ordered two of the military aviators to fly over the moors and bombard them. Adjudant Feierstein, carrying Captain Raymond, and Adjudant Peretti, carrying Lieut. de la Morlaye, both mounted on Blériots, were told off for the job. Four large bombs were placed in each machine, and the two aviators set off to the enemy's camp. The whole of the eight bombs were planted exactly in the centre of the stronghold, doing terrific damage and killing numerous men, with the result that the infantry were able to rush the position and take all the survivors prisoners.

GERMANY.

Two French aeroplanes crossed the German frontier near Fentsch in Alsace-Lorraine on June 30th, penetrating into the country for 4 or 5 miles before turning back. The authorities are investigating the matter.—B.

On July 16th Sous-officer Wilke was killed at Bohl, near Saarburg.

On July 15th a collision occurred at the aerodrome at Schwerin between Chief Pilot Geigant and Lieut. von der Luehe. Geigant suffered severe concussion and Lieut. von der Luehe was injured internally.

The collision at Schwerin-Goerries has resulted in the death of both the unfortunate aviators concerned, Geigant and Lieut. von der Luehe, the one dying on the 16th and the officer on the 17th of the month.

One learns that four new Zeppelins have been ordered for the German Army.

It is reported that the Bavarian military authorities are ordering a new Zeppelin, to be stationed at Germersheim.

Z. 4, the airship that landed at Lunéville last year, inadvertently crossed the Russian frontier last week whilst manœuvring in the neighbourhood of Neidenburg. The shots

fired at the dirigible by the Cossacks informed the pilot that he had strayed out of his proper course, and he immediately headed a little more westward and regained German air. None of the bullets struck the vessel, however.—B.

A new Zeppelin has just been completed at Friedrichshafen. She is destined for the army and will be known as Z. IX.

On July 15th Z. VII flew from Oos, in Baden, to Friedrichshafen, where she was "introduced" to Z. XXV. Z. XXV afterwards departed for altitude tests and Z. VII returned to Oos.

RUSSIA.

On July 10th two military aeroplanes collided at St. Petersburg. Lieut. Chenchin was killed and Lieut. Nagorny was terribly injured.

A second relief expedition is being organised by the Russian Minister of Commerce to go to the succour of Lieuts. Rousanoff and Broussiloff, who sailed in 1912 on a geographical voyage in the Arctic regions, and from whom no news has come. The expedition will be commanded by M. Swierdrop, a Norwegian, and in addition to its ordinary equipment it will carry a Henri Farman (80-h.p. Gnome) seaplane. M. Ewscucoff will act as pilot. The motor has been specially constructed for work in the polar regions. The petrol is carried direct to the crank-case to obviate condensation, and provision is made for keeping the oil at a temperature of 20 deg. C.

The escadrille attached to the 18th Corps, which has been doing much flying in the west of Russia, arrived at Riga from Revel on July 13th. They had been flying under exceedingly difficult circumstances, several stops being caused by trouble with Lieut. Serguereff's and Lieut. Nikol'sky's machines. They were also delayed for two days at Pernoff by forest fires.

On July 13th Capt. Firson was flying at a considerable altitude when the machine suddenly dived to earth, killing him instantly.

On July 15th, Capt. Jassipof and his mechanic were killed at Otschakof. Two aviators were also severely injured at Biniakoni, though they escaped with their lives.

ITALY.

For providing intense emotion the dirigible P. 5 must have surpassed all records on 13th inst. at Udine. How it all fell out is as follows: The vessel, with four officers and a motor-man on board, arrived at Udine from Verona about mid-day to pick up Col. Vercellana, officer in command of the garrison there. To that intent the four officers landed, two to report themselves, the others to look after the "cabling out" of P. 5. In their place four cavalymen were introduced into the nacelle to keep her down, while the mechanic Mario Roasio attended to his motors and other soldiers held onto ropes. Unfortunately, a gust of wind caused the dirigible to break away and carried with it one soldier who persistently held onto his rope. P. 5 rose rapidly, and before Roasio could lasso him the wretched man lost his head and let go, being, of course, instantly killed. So lightened, the vessel continued to rise, destruction appearing imminent to the helpless onlookers, and it was only the prompt action of the motorman which saved the situation. He got his engine to start and worked the controls, which normally require three men and of which he had no knowledge, so that he actually succeeded after a quarter of an hour's cruising around in landing the errant airship in the courtyard of the barracks, aided at the opportune moment by one of the cavalymen, who operated the ripping panel.



MILITARY AEROPLANES IN CHINA.—The Squadron of Caudrons at Pekin, which have been used in chasing the "White Wolf" Brigands.

Captain Mergari, who was responsible for the dirigible, appears to have found it difficult to choose words suitable to the moment, and it also seems unlikely that Roasio will be punished for exceeding his duties. In her last effort to be free, P. 5 damaged a N.C.O. badly by a prod from her anchor.

On the same day M. III made a long cruise over the Roman and Civita Vecchia region, being out over three hours and "evolving" brilliantly. I read that she is now fitted with Maybach motors. Naval Captain Scelzo was in command—not to be confused with another distinguished officer-pilot at Venice by name Scelsi.

Also on the 13th, P. 4, still stationed at Campalto, was busily engaged in sham fighting a "drachen" balloon which, when induced to sink onto the water, was captured and taken home by the victor. The boat hull nacelle of the P. series was of great use in this latter operation. It floats admirably, and one would think might be adopted generally by all small vessels.

Recently one of the navy's Bréguet seaplanes allocated to the Dreadnought "Dante," and piloted by Lieut. Brivonesi, has been used a lot at Gaeta and elsewhere. In a photo, the Bréguet is seen sitting on the top of a turret assisted by cranes—mechanical ones, of course—though this position is only taken up when the mothership is doing long cruises and the plane is not likely to be needed.

Searchlights were tested during the course of a trip over the Lido at Venice which the Italian Parseval undertook on the night of the 6th inst. The dirigible cruised about for two hours, going over to Padua and returning to her shed about midnight, as is quite right and proper—though somewhat disconcerting to rambling lovers, perhaps!

On the same night Commander Scelsi was also out but under very different circumstances. He went down with the fleet on the mother-ship "Amalfi," of which he is second in command, and which carried a flight of seaplanes, to Taranto. Thereabouts several very successful manœuvres were carried out. However, in the course of an evening ramble rather far from their base undertaken by two of the seaplanes that containing the commander had come down, and it was not till very late at night that they could be rescued, the mother-ship having gone into harbour with the fleet. Incidentally, the voice of the siren recalling all hands on board nearly caused a war scare.

Also on 6th inst., the Pordenone aerodrome was reopened as a training camp, with Capt. Zanusso in command and Lieut. Calori instructor, the latter arriving from Malpensa via Verona and Padua, at which places he came down to inspect the new escadrilles and their housing.

During the festivities on the 6th, Lieut. Calori created some interest by flying both an 80 and a 28 h.p. Nieuport alternately.

Lieut. Ettore Gragiani, who has been instructing for such a long time at Aviano and has just had honours showered on him, leaves there for Turin shortly and hopes to have a quiet time for a while.

There has been considerable quiet activity at Taliedo, Piacenza, and Ferrara among other centres recently. Only owing to his being caught in a thunderstorm does one learn that a colonel of the staff has been acquiring practice in aerial observation in that district, as happily it is still easy to pass unnoticed when away from Mother Earth.

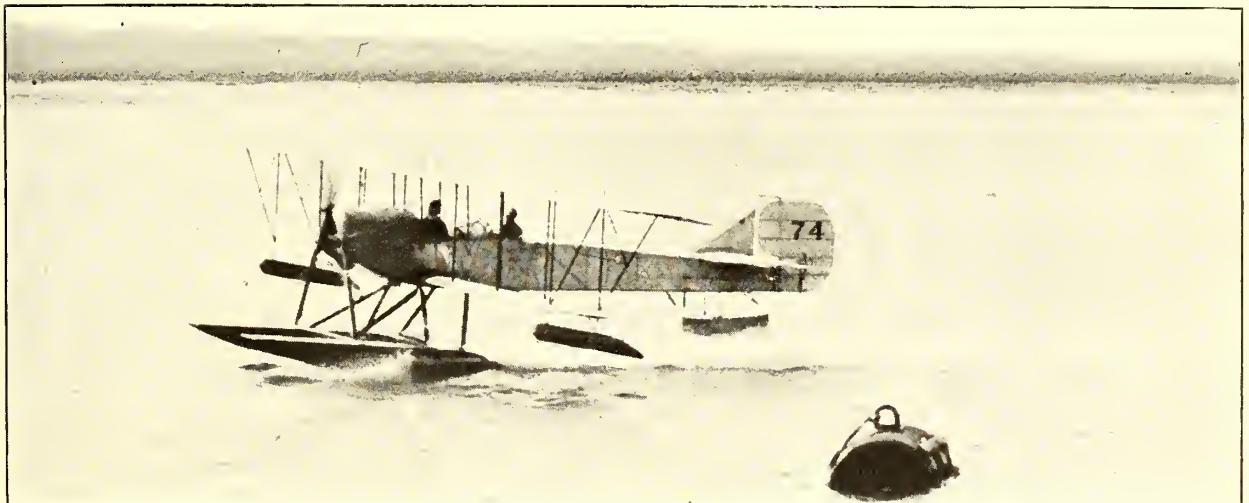
The Savoia firm promise to open a very complete school in the Malpensa district shortly.

Just too late for insertion last week and very worthy of note came news of a fine round flight carried through without any troubles by Lieut. Baracca. Leaving from Taliedo, the course taken passed over Piacenza, Ferrara, Mantua, Bologna, and Ravenna, just about 470 miles in indifferent and stormy weather, and was undertaken for military purposes connected with this important district, observers of high rank being carried in their respective zones—T. S. HARVEY

The following particulars of the rebuilt Forlanini airship are of interest. The airship is of the semi-rigid type and has a double envelope with an air space between, and there are eleven transverse partitions. The motors and propellers are attached direct to the nacelle. Two motors of 85 h.p. each are employed. The two propellers are of 13 ft. 8 in. diameter, and the mean pitch is 19 ft. 6 in. They are turned at a maximum speed of 275 revolutions per minute. Petrol can be carried for 24 hours' flying. Longitudinal balance is aided by shifting 250 litres (55 gallons) of water from one ballast tank to another. The maximum diameter of the envelope is 18 metres (58 ft.), length 237 ft., gas capacity 345,000 c. ft., air capacity 18,000 c. ft. Total weight, 19,000 lbs. Maximum lifting force, at 15 degrees C. and 760 mm. barometric pressure, 27,800 lbs. Useful ascensional force, 8,800 lbs. Theoretical speed, 65 k.p.h.; actual speed, 68 k.p.h.; speed with one motor, 46 k.p.h. Theoretical distance that can be covered with full load at maximum speed, 3,900 kms. (2,440 miles); at reduced speed, 6,900 kms. (4,310 miles). Theoretical distance with buoyancy for a 5,500 ft. climb at commencement of voyage, 700 miles at maximum speed; at reduced speed, 1,350 miles.

BELGIUM.

The military aviation organisation of Belgium dates from last year. The military aviation corps forms a special company of the engineers, and its headquarters are at Brasschaet. Officers may volunteer from all branches of the army on condition that they are unmarried, that they have served a minimum of a year



A Short seaplane (100-h.p. Gnome) taxiing on Southampton Water.

with their regiment, that their age is not over 35, and that they are in perfect physical condition and health. Applications for appointment have to be made through the commanding officer of their own regiment.

A major, a captain, and three lieutenants of the engineers are the permanent officers of the aviation corps, and to this permanent staff the pilot-aviators are attached. The permanent staff has charge of all instruction and training work, and apparently carries out the duties of an inspecting and purchasing department.

There is a military training school at St. Job, where all new officers are trained. St. Job has an aerodrome of 247 acres, a well-equipped repair-shop, and 13 sheds. The school is equipped with 7 Belgian Farmans built by the Maison Bollekens of Antwerp.

After having obtained their certificates at St. Job the officer-pilots proceed to the school at Brasschaet, where they pass through a three-months' course of training in the technique of military aviation, concluding with an examination and a flying test, which, successfully passed, entitles them to their military brevet, after which they are transferred to one of the military aviation centres. An officer does not remain stationary at any one centre, however, but is kept moving from one to the other in order that he may acquire a thorough knowledge of the whole country.

At the moment, the Belgian army possesses four complete escadrilles, two in process of formation, and four others are to be initiated immediately. Each escadrille is equipped with four two-seater H. Farmans (80 h.p.) built in Belgium. There is a motor-transport wagon for each machine, which carries a canvas shed and a travelling workshop, which has an electric lighting set capable of illuminating all four sheds of an escadrille.

HOLLAND.

On July 9th Lieut. Spandaw fell from a height of 100 ft. and succumbed to his injuries on the following day.

NORWAY.

One of the two army flying officers, either Capt. Sem-Jacobsen or Capt. Thaulow, is very likely to start in "The Northern Seafight" on the army Rumpler-Dove hydro-monoplane.—Ht.

SWEDEN.

During the big horse-races last Sunday at the Baltic Exhibition (Malmö), which were witnessed by the King and the Crown Prince, the two army pilots, Lieut. Silow, on a Bréguet biplane, and Lieut. Jungler, on a Blériot monoplane, arrived from the military aerodrome at Linhamm. Lieut. Jungler landed very quick, having only a narrow escape from running into the spectators. Lieut. Silow flew with his observer along the King's stand doing the military honours and kept flying over the hippodrome for all the races.—Ht.

DENMARK.

The well-known naval flying officer, Lieut. Hoeck, hopes to be allowed to start in "The Northern Seafight" on his successful Leveque flying-boat.)

BULGARIA.

The Rumpler pilot Friedrich, who demonstrated his firm's makes to the Bulgarian War Office, flew with a passenger from Sofia to Bucharest during his visit to Bulgaria, crossing the Balkan mountains and landing after a journey of three hours.—B.

ARGENTINA.

The entire duration records in the Argentine have been beaten recently by Lieut. Goubat, of the Argentine Army, on a Rumpler-Dove. Among other performances he covered 1,400 kms. in 15 hours.—B.



PEKIN FROM ABOVE; taken by M. René Caudron from a Caudron biplane (80-h.p. Gnome). In the centre is the Great Gate of Peking with the City Wall on each side. Outside the Wall is the railway and its station, the railway passing round the Gate. In the left lower part of the picture are the crowded streets outside the Wall.

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CHINA.

The Chinese air squadron employed against "White Wolf's" brigands was ordered out on April 6th and worked till May 24th, each machine averaging 150 kms. per day in cross-country flying. Col. Tsing, who commanded the expeditions, took his brevet in France, but the other three Chinese pilots were trained at the Caudron military school at Pekin by M. Emile Obre. The operations against the brigands were entirely futile until aeroplanes were brought into the field, but once the location of the brigands was made by the air scouts, considerable success was attained at once. On one occasion the rebels were ambushed and 50 prisoners were taken, who were duly beheaded next morning. Two French mechanics, MM. Boffa and Martineche, went to the scene of operations with the troops, where they distinguished themselves. M. Boffa has been promised the head of the rebel leader as a reward for his special services!

The machines used at the front were four Caudron biplanes, three of 80 h.p. and one of 50 h.p. All the machines behaved excellently. The school work is going ahead with great vigour. At the beginning of May forty Chinese officers started a course at the Caudron Military School, and on the 20th of the same month no less than 10 of them took their certificates!

Foreign Notes.**France.**

The jury of the Concours de Sécurité have decided that no one shall yet receive the principal award of 400,000 francs (£16,000), but they have decreed that 50,000 francs (£2,000) shall be awarded to the proprietors of the Sperry gyroscope and 30,000 francs (£1,200) to the entrants of the Paul Schmitt biplane. The following gratuities have also been made: to MM. Caudron Frères, 15,000 fr.; the Dautre Company, 10,000 fr.; the Avi-Auto Company (Lelarge carburettor), 10,000 fr.; Capt. Etévé (stabiliser), 8,000 fr.; M. Moreau (autostable), 5,000 fr.; M. Robertin (parachute), 2,000 fr.; MM. Philippe and Perron (quick-release device), 1,000 fr.

On July 14th M. Champel flew from Nantes to Paris, a distance of 410 kms. (256 miles), in 3 hrs. 15 mins. flying time, after taking part in a fête at Nancy, during which he dropped Mme. Cayat de Castella and her parachute overboard. He flew a biplane with 100-h.p. Anzani engine and carried M. Dussot, an aviator, as passenger. Incidentally, this makes M. Champel's 2,065th passenger.

On July 11th M. Rugère beat a world's record by flying to 3,400 metres (11,160 ft.) on a Voisin biplane (130-h.p. Salmson), accompanied by three passengers.

Germany.

Official examination of Herr Oelrich's barographs used on his D.F.W. in breaking the world's height record give the actual height reached by him as 7,850 metres, instead of 7,500 metres. 7,850 metres is 25,756 ft., 5,600 ft. over Legagneux's previous record, and within 700 ft. of 5 miles.

The Gelsenkirchen week, in the very heart of Germany's "black country," commenced on July 12th with a number of events on the Gelsenkirchen ground and a cross-country flight to Crefeld, where Chevillard was looping to a most enthusiastic crowd. An interesting newcomer was an Industrie biplane with a 100-h.p. Basse-Selve motor operated by Schiffers, which gave a good account of itself on the opening day. The cup presented by the City of Crefeld was won by Stiploschek (130-h.p. Jeannin-Dove), who, on the second day, achieved the greatest altitude with 3,550 metres.—B.

The results of the first day's flying were: Duration—Herr Ballod (1 hr. 50 mins.); Herr Wieland (1 hr. 47 mins.); Herr Schiffer (1 hr. 40 mins.); Herr Stoephasius (1 hr. 38 mins.). Altitude—Herr Ballod, 4,200 metres (13,400 ft.); Herr Wieland, 2,500 metres (8,020 ft.); Herr Stoephasius, 2,250 metres (7,380 ft.). Speed—first heat: (1) Herr Wieland, (2) Herr Schiffer; second heat: (1) Herr Ballod, (2) Herr Stoephasius; third heat: Herr Hanschke, Herr Noiting.

The second day of the Westphalienne meeting at Cologne was marred by bad wind. The result of the day's work was as follows:—

Altitude: (1) Stiploschek (3,550 metres); (2) Beck (3,300 metres); (3) Ballod (3,200 metres); (4) Krieger (3,050 metres); (5) Wieland (3,000 metres).

Duration: (1) Dead heat—Ballod, Schmidt, Schlueter, Stoephasius, Wieland, and Ansbieger (1 hr. 50 mins.); (7) Krieger (1 hr. 48 mins.); (8) Stiploschek (1 hr. 44 mins.); (9) Beck (1 hr. 36 mins.).

The third day of the aviation week at Cologne was chiefly devoted to reconnaissance tests over the Ruhr Valley in conjunction with troops. Herr Beck was awarded the prize given by the Minister of War, and Herren Stoephasius, Schlueter, Schmidt and Wieland were classed respectively 2 to 5.

The result of the altitude test was (1) Herr Ballod, 10,170 feet; (2) Herr Ansbieger, 8,860 feet; (3) Herr Schiffers, 5,085 feet.

The four heats of the speed contest were won by Herren Stiploschek, Schlueter, Ballod and Schmidt.

On July 14th Herr Basser, carrying Dr. Elias as passenger, left Johannisthal at 5.30 a.m. and flew without landing to Budapest in 4½ hours, a distance of 475 miles.

Flying at Johannisthal took place every day during the month of June, 128 pilots being in constant activity. The total flights amounted to 3,711, the duration being 519 hours 5 minutes. Ungewitter (Rumpler-Dove) accounted for 316 ascents; Landmann (Albatros) had the best duration total with 46 hours 14 minutes.

Russia.

On July 12th M. Laporte broke a World's record at St. Petersburg by flying for 9 hrs. 16 mins. on a Voisin biplane (Salmson engine) with two passengers.

Austria.

Austria, as was fitting, carried off the largest money prize in the Vienna-Aspern week, as Sparmann (Colmer-Daimler bi) heads the list with a total of 12,790 kroners; Garros (Morane-Gnome mono), second, with 11,350 kroners, then follows another Austrian, Lieut. Bier (Lloyd bi), 11,000 kroners; Von Loessl, Germany (Albatros bi), 9,620 kroners; Gilbert, France (Deperdussin), 9,100 kroners, down to Desbryere, another Frenchman and Blériot pilot, who, as 24th, won the grand sum of 93 kroners. Lilly Steinschneider was 22nd, with 400 kroners; she flew an Etrich-Dove.—B.

Australia.

On July 18th M. Guillaux flew from Melbourne to Sydney (560 miles) carrying mails on a Blériot monoplane. Some short while previously M. Guillaux performed the journey in the opposite direction.

Some Caudron Performances.

In the race for the Grand Prix de la Ville de Paris at Longchamp recently, M. Chanteloup's Caudron biplane, which won against several of the fastest French machines, such as the late M. Legagneux' Nieuport, and M. Prévost's Deperdussin monocoque, made a speed of 147 kms. (about 92 miles) per hour, with an 80-h.p. Anzani engine. The Caudron has a monoplane type fuselage with the standard Caudron biplane wings with flexing trailing edge and tail.

At the great Vienna Meeting the same machine, with slightly bigger wings, took 3rd place in the speed-range competition, doing 135 to 64 kms. per hour, and was only beaten by two 150-h.p. Albatros biplanes. She also took 2nd prize in the speed-climb, rising 1,000 metres (3,280 ft.) in 2 mins. 59 secs., the winner being M. Garros with 100-h.p. Morane. Another Caudron (a biplane of the standard (80-h.p. le Rhone) military type) was 3rd, doing the 1,000 metres in 3 mins. 4 secs. The pilots were MM. Chanteloup and Poulet. M. Poulet also climbed one day to 5,600 metres (about 18,400 ft.), without oxygen, but was disqualified for landing outside the aerodrome, owing to his engine stopping. A Caudron biplane (80-h.p. le Rhone), piloted by M. Poulet, was first, and another with a 60-h.p. le Rhone piloted by M. Chanteloup, was second in the quick get-off competition. M. Poulet took 30 metres run to rise to 10 metres height, and M. Chanteloup took 35 metres. The competitors had to get over a string 10 metres above the ground without touching it. M. Chanteloup was first and M. Poulet second in landing over a 10 metre string into a space 60 metres square, the former landing in the middle. M. Chanteloup was also 4th in the Speed Competition, being beaten only by the 160-h.p. Albatroses and a 100-h.p. Morane. The two Caudron pilots were alone in winning in actual prize money, the sums guaranteed for appearing at the meeting.

The Aeronautical Society of Great Britain.

OFFICIAL NOTICE.—Associate Fellowship Election.

The date of this election has been postponed until the middle of September, in order that candidates may be able to take advantage of the second part of Rule 28 with regard to payment of subscriptions.—BERTRAM G. COOPER (Sec.).

The Berlin Aero Show.

The Second German International Aero Show at Berlin, organised by the Imperial Automobile Club, the Imperial Aero Club, and the Association of Motor Manufacturers of Germany, is to be held in the new Exhibition Hall at Kaiserdamm, Berlin, from October 31st to November 10th inclusive. All stands are decorated in uniform style and are lighted and insured against fire by the committee at an inclusive cost of 50 marks (£2 10s.) per square metre for aeroplanes, in the centre of the hall, 80 marks per square metre for motors in the same position, 60 marks per square metre at the sides, and 40 marks per square metre of wall space.

Applications for space and for other particulars should be made to "Ala," 12, Unter den Linden, Berlin W.8, as early as possible.

In view of the enormous strides that aviation is making in Germany it should be well worth the while of really enterprising British builders to consider the question of exhibiting at this aero-show, not in expectation of German orders, but because the recent performances of German aeroplanes will assuredly bring thither the representatives of the Armies and Navies of every other nation.

Steel.

Thos. Firth and Sons, Ltd., of Sheffield, have just issued a brochure dealing with the special steels which they now manufacture for aircraft. These steels vary from a high grade mild steel of a tensile strength of 26 tons per square inch to high tensile steels capable of giving a breaking stress of 129 tons per square inch, after suitable heat treatment. Special rust-proof steels and case-hardening steels are included in the list, as is a nickel steel which is largely rust-resisting and practically non-magnetic. The brochure gives details of the qualities of each steel, whether it is suitable for welding or brazing, etc., and there is a solemn warning as to the needs of retreatment in those cases where heating damages the quality of the steels.

In the case of all the high tensile heat-treated steels welding or brazing largely destroys the strength of the material, and Firth and Sons, Ltd., recommend the working up and welding of these steels in the annealed form and returning the complete parts to them for heat treatment, by which means the full value of these special steels may be secured. All aeroplane manufacturers should have this booklet, which may be obtained either from the firm's works in Sheffield or from their London representative, Mr. R. W. B. Billingham, 8, The Sanctuary, Westminster, S.W., for the information given therein is likely to save many fatal mistakes being made through the maltreatment of the high-tensile steels necessarily used in modern aeroplanes.

A Cross-Country Flight.

The following graphic description of a cross-country flight comes from Miss Elliott, who flew with Mr. J. L. Hall from Shoreham to Hendon on Tuesday of last week:—

"I came back from Shoreham with Mr. Laurence Hall on his Avro on Tuesday morning, after his exhibition week-end there, and we did the journey, from the start outside the shed to the landing at Hendon, without a stop, in forty-five minutes. Of course, I know it is not a tremendous journey, as cross-country flights go nowadays, but I think that for a little low-powered machine like the 50-h.p. Avro, and carrying a passenger, it was distinctly good work.

"When he told me of his projected visit to Shoreham, and very kindly gave me the opportunity of making the flight with him, either there or back, I jumped at the chance.

"The week-end at Shoreham was a great time, and I am pleased to have had even a very unimportant share in it.

"The happenings were many and varied—some very funny, some the reverse. One interesting incident was the enforced

but quite excellent landing of Mr. Hall and Captain Tyrer, owing to rising mist and a failing engine, in a field just outside the aerodrome, whereupon some thoughtful person rushed to the office and telephoned to London that the aviator and passenger were killed, and the mechanics, tearing to the rescue on Mr. Hall's yellow Hispano-Suiza, failed to observe a four-foot dyke which the Shoreham people had not warned them of, with the result that the car turned over bodily into it. Another was the smashing-off of the Avro's new tail-skid, late on Monday evening, against an enormous flint lying hidden in the grass, at the conclusion of a highly successful test flight after overhauling the engine.

"I began to wonder whether our start, arranged for six o'clock the next morning, would come off; but Mr. Hall and his men were not to be beaten by a trifle like a broken tail-skid. They had prudently brought the old one (still perfectly good after over six months' use) with them in case of accidents, and as by that time all the other sheds were locked up for the night, they improvised a blacksmith's shop, made a new lug (after having first to make the tools to make it with!) worked until twelve, started again at four, and had the work done ready for the start at the appointed time. One or two other little contretemps turned up to delay us—the petrol funnel had been left in the aforesaid dyke, on the far side of the aerodrome, and a search party went off in the battered remains of the car to fetch it, and meanwhile another detachment of the staff successfully burglarised another funnel from somewhere else, and had the tank nearly filled by the time they got back, while I sat on a trestle revelling in the morning sunshine and the smell of oil and petrol, and the fun of the whole thing. And then we got off.

"We started with a couple of wide circuits to get our height, and for the first 2,000 feet we were bumped about in all directions, even over the sea. The bumps did not worry me in the least—they just served to show how perfectly the pilot had the machine in hand. Above that it was steady, and we turned inland at a tremendous pace, still climbing—we were well over 4,000 feet most of the way. There was evidently a strong wind behind us and rather sideways, for we were blown right off the intended track, and, moreover, were going so fast that we went past most of our landmarks before it was time to begin looking for them. But Mr. Hall apparently has the gift of finding his way over unknown country, and kept the right direction unflinchingly. He had expected we should have to land at Brooklands en route, and had arranged accordingly; but when he sighted the track, long before we had expected to be anywhere near it, we were going so well, and had such a reserve of power in hand, that it really was not worth while turning into the high wind to come down, and we went right on.

"Hendon received the returning wanderers rather unkindly. Possibly the *genius loci* was annoyed; anyway, we were coming down over the aerodrome in a most beautiful glide, with the propeller stopped, when we simply fell down. I have always wanted to know what it really feels like to be dropped by a *remou*—and now I do. But we didn't fall far. In an instant Mr. Hall had put the nose down in a clean dive, nearly vertical; got the propeller and engine going again, and brought the machine up smiling, all out—all within a few seconds. Then he tried to make her climb again, and she wouldn't; so we came down for good, landing so perfectly that it was impossible to tell when we touched the ground. It was a fine conclusion to an altogether fine piece of piloting, and I would not have missed it for the world.

"Speaking from the passenger's point of view, and quite seriously, I find it impossible to speak too highly of either Mr. Hall or the Avro. He is a thoroughly sane and sensible flier, who takes no unnecessary risks, thinks everything out beforehand, is prepared for any emergency, and exhibits the most admirable patience and self-restraint under the most trying circumstances. Also, I must confess, I have always more confidence in a pilot who has the common sense to make use of a safety helmet and safety belt. The little Avro is beautifully steady, and gives one a delightful sense of comfort and security, and it is always kept in the most perfect going condition."

Castrol Successes.

Mr. Louis Coatalen, who has been so successful in designing the Sunbeam engines, both for motor cars and aeroplanes, has written to Messrs. C. C. Wakefield and Co., the well-known manufacturers of Castrol, congratulating them on the excellence of the oil they supplied for use with the Sunbeam cars which won the Tourist Trophy race in the Isle of Man, and showed up so well in the French Grand Prix. The Sunbeam Co. have used Castrol ever since the Coupe de L'Auto Race of 1912, and speak in high terms of this oil on account of its assistance in overcoming the difficulties which are encountered in lubricating an engine the revolutions of which rarely drop below 3,000 r.p.m.

Fuel Reliability.

A review of recent motor and aviation events reveals the fact that a number of the principal competitions have been won upon Pratt's Perfection Motor Spirit, which is the more remarkable in view of the various types of machines employed. In the R.A.C. Light Car Trials at Harrogate 53.98 miles to the gallon were obtained, and an award of six out of nine gold medals was secured by the Gordon car and three Swift cars, all using Pratt's spirit. In the motor-cycle Senior Tourist Trophy and the Junior Tourist Trophy races, in the Isle of Man, Pratt's again secured premier position. Following this, Mr. K. Lee Guinness, on the Sunbeam in the Tourist Trophy car race—the Blue Riband of the year—also employed Pratt's spirit. This was followed by the World's Record being put up on June 24th by Mr. S. G. Hornsted at Brooklands of 128.16 miles per hour, also on Pratt's. In aviation Mr. W. L. Brock in the London-Manchester-London Race and the London-Paris-London Race attributes his success in a great degree to this famous spirit. Successes of this sort demonstrate the reliability and efficiency of Pratt Fuel in a way that can hardly be attributed to mere coincidence.

Photographs.

The photographs of the entrants for the London-Paris Air Race and that of Mr. Brock in his machine which appeared in the frontispiece of THE AEROPLANE last week were taken by Mr. F. N. Birkett, 27, Percy Road, Shepherd's Bush, W. The photograph of the seaplanes at Felixstowe was taken by Mr. C. J. Emeny of that town. Copies of these may be obtained from the photographers mentioned.

A Safe Safety Helmet.

The importance of a properly designed safety helmet for aviators has been insisted on with such frequency by all authorities that it is surprising that anyone should still fly without one.



Of the various types in existence there is none which can be more confidently recommended than the "Warren" Safety helmet illustrated herewith. The dome of this helmet consists of a leather outer skin, and a layer of cork padding backed by steel springs. Within the dome is a kind of false top of fabric, which adapts itself to the head, and acts as a further buffer.

The effect of any impact on the helmet is distributed over the skull by the arrangement of this inner top,

and through the agency of the outer shell, thus taking advantage of the considerable strength of the human head against a distributed load.

The whole helmet is very light and comfortable, is provided with effective ear-guards, and does not possess that ungainly appearance characteristic of some aviation headgear.

Tautz and Co., of 12, Grafton Street, W., who supply this helmet, also manufacture jackets, mufflers, overalls, and other articles of attire useful to aviators or motorists, and their goods are all invariably of the highest quality.

The Week's Work.

Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Brooklands ...	Good	Good	Fair	Fair	Fair	Good	Gusty
Calshot ...	Fine	Fine	Fine	Show'y	Dull	Fine	Show'y
Eastbourne ...	Calm	Fine	Fine	Calm	Calm	Wind	Wind
Eastchurch ...	Fine	Fine	Wet	Fine	Fine	Fine	Wind
Hendon ...	Fair	Fair	Fair	Fair	Fair	Fair	Gusty

Flying at Hendon.

On Thursday, despite the showery afternoon, much good flying was done at Hendon, Messrs. Howarth and Lillywhite also flying the Blériot. Later on the weather cleared somewhat and Mr. Brock ascended to 6,000 feet on his Morane, Mr. Barrs flew the Blériot, and M. Louis Noel with passengers on the Maurice Farman. Mr. J. L. Hall evoluted on his Avro and Mr. Carr made loops and tail slides on "Lizzie."

On Friday, shortly after lunch, M. Garros and Herr Hirth on their Moranes left for Paris together, arriving without incident at Villacoublay early in the evening.

On Saturday afternoon Hendon was favoured with fine hot weather and an excellent attendance. Mr. Lillywhite on a G.-W. biplane, Mr. Barrs on the Blériot, Messrs. Brock and Carr on Moranes, Mr. Grahame-White and M. Louis Noel on the G.-W. Maurice, and M. Verrier gave exhibition flights and carried numerous passengers. A four-lap race round Bittacy Hill and back attracted eight starters—Messrs. Noel, Brock and Carr on Moranes, Mr. Grahame-White on the Maurice, M. René Desoutter on the Caudron (45 Anzani), Mr. Barrs on the Blériot, M. Verrier on a Maurice Farman, and Mr. Lillywhite on a G.-W. biplane. Messrs. Carr, Noel, and Brock finished 1st, 2nd and 3rd, respectively, after a very good race. While outside the aerodrome in the course of the race the ignition of Mr. Barrs' motor failed completely owing to the high-tension connection to the distributor coming adrift, and he was forced to land in a restricted field with consequent deterioration of the chassis and a wing.

Very shortly afterwards M. Desoutter took a passenger on the Caudron. As he rounded No. 2 pylon the passenger appears to have started designing new ragtime dances in the nacelle, and M. Desoutter decided it was time to land, which he did with the wind behind him. Finding he was running into soft ground he turned the machine sharply and wrenched off a skid, whereupon the machine turned a graceful somersault. Barring the broken skid no damage of any kind was done.

Mr. Hall ascended to a great height on his Avro; Mr. Carr gave his usual looping display on "Lizzie," and Mr. Baumann on the Beatty school Wright (50 Gnome) circled around the aerodrome.

On Sunday, despite showers, a goodly crowd witnessed the flying. M. Noel on the Maurice Farman, Messrs. Gates, Lillywhite, Dunn and Osipenko on G.-W. biplanes making numerous flights both with and without passengers. Mr. Brock and Mr. Carr made altitude flights simultaneously to 9,000 and 8,500 feet respectively, Mr. Brock later ascending again to 4,000 feet.

Mr. Carr also made loops and tail slides, and Mr. Baumann made a flight on a Wright.

Flying at Brooklands.

On Monday Mr. Hawker flew to Farnborough on the Sopwith machine that he flew in Australia, now rebuilt with a dihedral to the lower plane, and an uncovered section to the fuselage. In the afternoon Mr. Gower was flying the 50-h.p. Blériot, Mr. McGordon the 80-h.p. Sopwith, and Mr. Hawker returned from Farnborough.

On Tuesday Messrs. Clempton and Warrend (Vickers), and Messrs. Forster and Rutledge (Bristol), took their brevets. In the afternoon Mr. Barnwell flew the extension gun-carrier to Joyce Green, with Mr. Charles Pellassey as passenger. Mr. Raynham was testing an 80-h.p. Avro. Mr. Gower was out on the 50-h.p. Blériot. Mr. Raynham and Mr. Sippe were flying Mr. Creagh's Bristol tractor.

On Wednesday Mr. Barnwell was out, morning and evening, on the double surface box-kite with a Vickers radial engine. Mr. L. B. Hay (Bristol) was taking his brevet, but climbed on a right-hand turn and side-slipped, doing considerable damage to the machine. Mr. Adamson (Bristol) passed test A.

On Thursday Mr. Barnwell was out on the gun-carrier, then Mr. A. Knight had his first flight on this machine. The Sopwith "Seaplane Circuit" machine, with 100-h.p. British monosoupape Gnome engine arrived. In the afternoon, Mr. Barnwell took two passengers to Chertsey Bridge and back on the Vickers "gun bus." Mr. Raynham was out on the Avro 8. Mr. Adamson (Bristol) took his brevet. Mr. Elsdon had his first flight on the gun-carrier. Mr. Raynham then took up the same machine, and seemed to like it very much. Mr. McGordon took his brevet on the 80-h.p. Sopwith in very good style. Mr. Hawker was out on the Sopwith scout and Mr. Mahl on the "Circuit" machine, but burst a tyre. Messrs. Knight and Elsdon then did some good flights on the Vickers gun-carrier.

On Friday, Mr. Mahl went to Farnborough on the 100-h.p. British Gnome Sopwith, and Mr. Barnwell to Joyce Green, with a passenger, on the Vickers gun-carrier. In the afternoon, Mr. Barnwell and passenger returned from Joyce Green on a new Vickers gun-carrier; this machine looks a really good job. Mr. Gower was out on the 50-h.p. Blériot. Mr. Mahl returned from Farnborough. Mr. Raynham tested the Martinsyde, and Mr. Sippe was out on Mr. Creagh's Bristol.

On Saturday, Mr. Jack Alcock started for Shoreham on the Sunbeam Farman, but turned back at Reigate owing to bad weather. Mr. Barnwell took Mr. Howard Flanders for a passenger ride in the Vickers gun-carrier. Mr. Raynham was out on an 80-h.p. Avro. In the afternoon Mr. Barnwell took a passenger on the gun-carrier. Mr. Raynham took the 80-h.p. Avro up to 7,000 feet. Mr. Hawker tested a new Sopwith scout, and then did some loops on his looping machine. Mr. Mahl was testing his "Circuit" Sopwith.

On Sunday Mr. Barnwell did passenger work on the Vickers gun-carrier. Mr. Raynham was on the 80 Avro, and Mr. Mahl on the "Circuit of Britain" Sopwith. Mr. Hawker was looping, and Mr. Dukinfield-Jones was out on the D.F.W.

The trans-Atlantic Martinsyde is now being put together, minus the engine, at Brooklands, but nothing further has been decided about its attempt on the big flight. One may assume almost definitely that it is now too late in the year to do the necessary tests and make the necessary preparations in Newfoundland. Negotiations with several would-be purchasers have been entered upon, but so far as one can gather no definite agreement has been reached.

Flying at Shoreham.

Last Saturday, the opening day of the Second Summer Meeting at Shoreham, was gusty, which interfered considerably with the programme. Mr. Eric Pashley made several fine flights in his biplane.

On Sunday the weather improved, and Messrs. Eric and Cecil Pashley did a great deal of flying, carrying many passengers. Mr. Eric Pashley and Mr. W. L. Elliot had a friendly speed contest over six miles on their respective and very similar machines. Conceding Mr. Elliot 17½ seconds' start, Mr. Pashley won by 17 seconds. Mr. G. M. Dyott on his own-design monoplane gave several excellent exhibitions.

Next Saturday the 5th anniversary of M. Blériot's crossing the Channel will be commemorated by a special meeting. M. Blériot has presented a bust of himself, the Brighton and Hove hotel proprietors a trophy, and a substantial cash prize for the occasion. Miss Kate Carney is offering a prize for a bomb-dropping competition, and Mr. T. Elben one for the performance which best pleases a committee of ladies.

Mr. G. M. Dyott is to give exhibition flights on the Dyott monoplane on Sunday.

Flying at Scarborough.

Every day last week, except Thursday, Mr. Hucks was looping over the seafront at Scarborough. Fog was bad, and once Mr. Hucks almost grazed the flagstaff of the Grand Hotel. As all the flights were given in full view of everyone no "gate" could be taken, so Mr. Hucks hit on the novel idea of offering

an aviation button for sale to all spectators, at 6d., the wearing of the button signifying an appreciation of the flying and the desire to support the efforts of the town authorities. On Friday Mr. Hucks flew to Filey with a lady passenger. On Tuesday nine Army aviators of No. 2 Squadron, R.F.C., arrived at Scarborough on their way to Montrose. On Saturday Mr. Hucks landed on the sands in the South Bay, where he was received by the Mayor, who made a congratulatory speech and afterwards presented Mr. Hucks with a cigar case. The Scarborough Corporation are now preparing an aerodrome so that Mr. Hucks' visit will have a lasting effect. Many thousands of aviation buttons were sold, and Mr. Hucks' flights attracted an enormous number of visitors.

Flying at Rugby.

In the grounds of Newbold Revel Hall, near Rugby, last Saturday, Mr. Marcus Manton demonstrated aerially for the Monks Kirby Farmers' Club Show, and attracted a record "gate," which included a large contingent from Rugby School. The flying ground was a nice flat patch, but surrounded by numerous trees, and Mr. Manton had to corkscrew his way out with climbing turns to left and right. In the afternoon the loop was duly looped, the bank banked, and the steeple chased amid much enthusiasm.

During the evening, whilst Mr. Manton was doing a double loop the engine petered out when the machine was standing on its tail. At once it started a tail slide. The wings flapped violently, and the whole machine rattled as though it were breaking up. After falling a considerable distance it turned over sideways and then attained a nose-dive which was easily corrected.

On Tuesday this week Mr. Manton appears at March, in Cambridgeshire, and on Saturday at Leagrave, near Luton.

Flying at Eastbourne.

On Tuesday of last week Mr. Fowler gave exhibition and passenger flights at Eastbourne on the Eastbourne Aviation Company's Farman seaplane.

On Thursday Flight Lieut. Littleton en route for Portsmouth landed at Eastbourne Aerodrome owing to oil-pump troubles. He remained the night at Eastbourne and continued his journey next day.

Flying at Eastchurch.

On Monday Mr. Frank McClean made a flight on the Short seaplane (160 Gnome), which he flew up the Nile early this year. This is the machine's first flight since its return from Egypt.

On Saturday Mr. Leo Jezzi made two flights on his biplane (35-h.p. J.A.P.).

School Reports.

Brooklands.—AT BRISTOL SCHOOL: Instructors: Messrs. Jullerot, Merriam, Stutt. Pupils with instr on machine: Capt Bernard (9), Lt Sanders (5), Mr. Collins (17), Mr. Rutledge (3), Lt Lawrence (7), Mr. Hay (1), Mr. Lucas (2), Mr. Adamson (17), Capt Napier (7). Strts or rolls alone: Lt Coles (2), Mr. Rutledge (2), Mr. Moule (2), Lt Lawrence (9), Mr. Adamson (3), Mr. Hay (2), Mr. Collins (4). S's or circs alone: Mr. Adamson (2), Lt Sanders (6), Capt Bernard (6), Capt Napier (6), Lt Coles (1). Certificates taken: Mr. Rutledge, Mr. Adamson. Machines in use: Three Bristol biplanes.

AT VICKERS SCHOOL: Instructors: Messrs. Barnwell, Knight, Elsdon, and Webb. Pupils with instr on machine: Capt Lumsden (16), Lts Clemson (2), Wells (7), Gillman (3). S's or circs alone: Lts Clemson (2), Gillman (6), Wells (12), Warrand (4). Certificates taken: Lts Warrand and Clemson. Machines in use: Three school biplanes.

AT BLÉRIOT SCHOOL.—Instructor: M. Jules Teulade. Pupils doing strts or rolls alone: Messrs. R. P. Creagh (23 mins), A. Crick (30 mins), G. L. Pitt (30 mins), W. H. Treloar (92 mins.), Comte FitzJames (36 mins). S's or circs alone: Messrs. A. Crick (46 mins), H. O'Hagan (33 mins), V. Wilberforce (15 mins) on 45 h.p. to 1,500 ft. Machines in use: Blériot monos (25, 28, 35 and 45 h.p.). Mr. E. L. Gower 2 hrs. on 50-h.p. Gnome. New 35-h.p. Anzani in use for school.

Eastbourne.—AT E.A.C. SCHOOL: Instructors: Messrs.

Fowler and Morgan. Pupils with instr on machine: Messrs. Butler, Arnold, Hardstaff and Bass-Sutton. Machines in use: E.A.C. biplanes.

Hendon.—AT GRAHAME-WHITE SCHOOL: Instructors: Messrs. Barrs and Howarth. Pupils with instr on machine: Messrs. Lou, Wyles, Gruning, Courtney, Murphy, Stalker, Upton, Toolis and Sir A. Sinclair. Messrs. Duncan and Strickland (new pupils). Strts or rolls alone: Sir A. Sinclair, Mr. Winter and Mr. Shepherd. 8's or circs alone: Messrs. Robinson, Lowe, Winter, Shepherd. Certificates taken: Messrs. Robinson and Winter. Machines in use: Grahame-White school machines.

AT THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. René Desoutter and R. M. Murray. Pupils doing strts or rolls alone: Messrs. Abbott, Valazzi and Cornier. 8's or circs alone: Mrs. Buller, Messrs. Abbott and Cornier half circuits. Machines in use: Two Caudron biplanes, 35 h.p.

AT HALL FLYING SCHOOL.—Instructors: Messrs. D. W. Clappen and Virgilio. Pupils doing strts or rolls alone: Miss D. Clifford (10), Messrs. Haines (9), A. Charig (4), R. Gibson (8), Scott (new pupil) (4), J. Rose (4). 8's or circs alone: Messrs. Arcier (3), H. Gearing (8), Brookes (3 circs.). Machines in use: Caudron and Avro biplanes and Deperdussin mono. Mr. J. L. Hall returned from Shoreham-by-Sea in 45 mins non-stop accompanied by Miss M. L. Elliot.

AT BEATTY SCHOOL: Instructors: Messrs. Baumann and Watts. Pupils with instr on machine: Mr. Allen (14), Lt Maguire (32), Messrs. Ruffy (26), Bentley (55), Lt Browning-Paterson (22), Capt Bass (12), Messrs. Roche Kelly (70), Liung (61), Khan (5), H. Keating (10), Princess Ludwig of Lowenstein Wertheim (15). Machines in use: Wright biplanes.

Shoreham.—AT PASHLEY SCHOOL.—Instructors: Messrs. E. C. and C. L. Pashley. Pupils with instr on machine: Messrs. E. P. Roberts, H. Pashley. 8's or circs alone: Mr. W. Mortimer. Machines in use: H. Farman type (50 Gnome). The new Pashley biplane was put through many tests throughout the week.

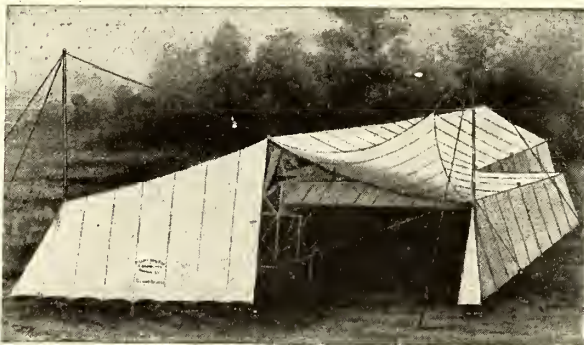
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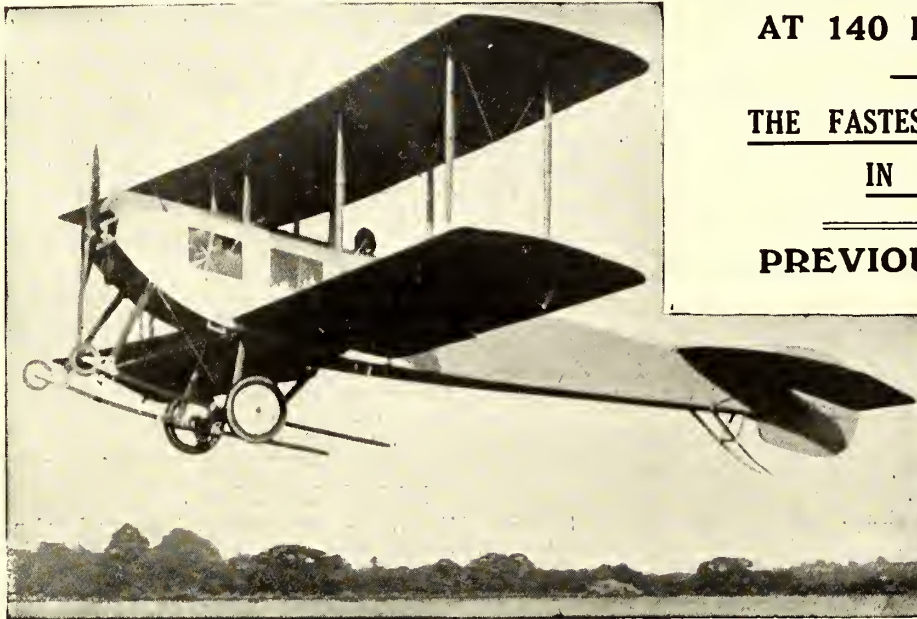
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Aug. 1. Saturday	} August Holidays Ninth London Aviation Meeting (Three days)
Aug. 2. Sunday	
Aug. 3. Bk-Holiday	
Aug. 8. Saturday ..	August Meeting.
Aug. 15. Saturday ..	Second Hendon Meeting.
Aug. 22. Saturday ..	Colindale Meeting.
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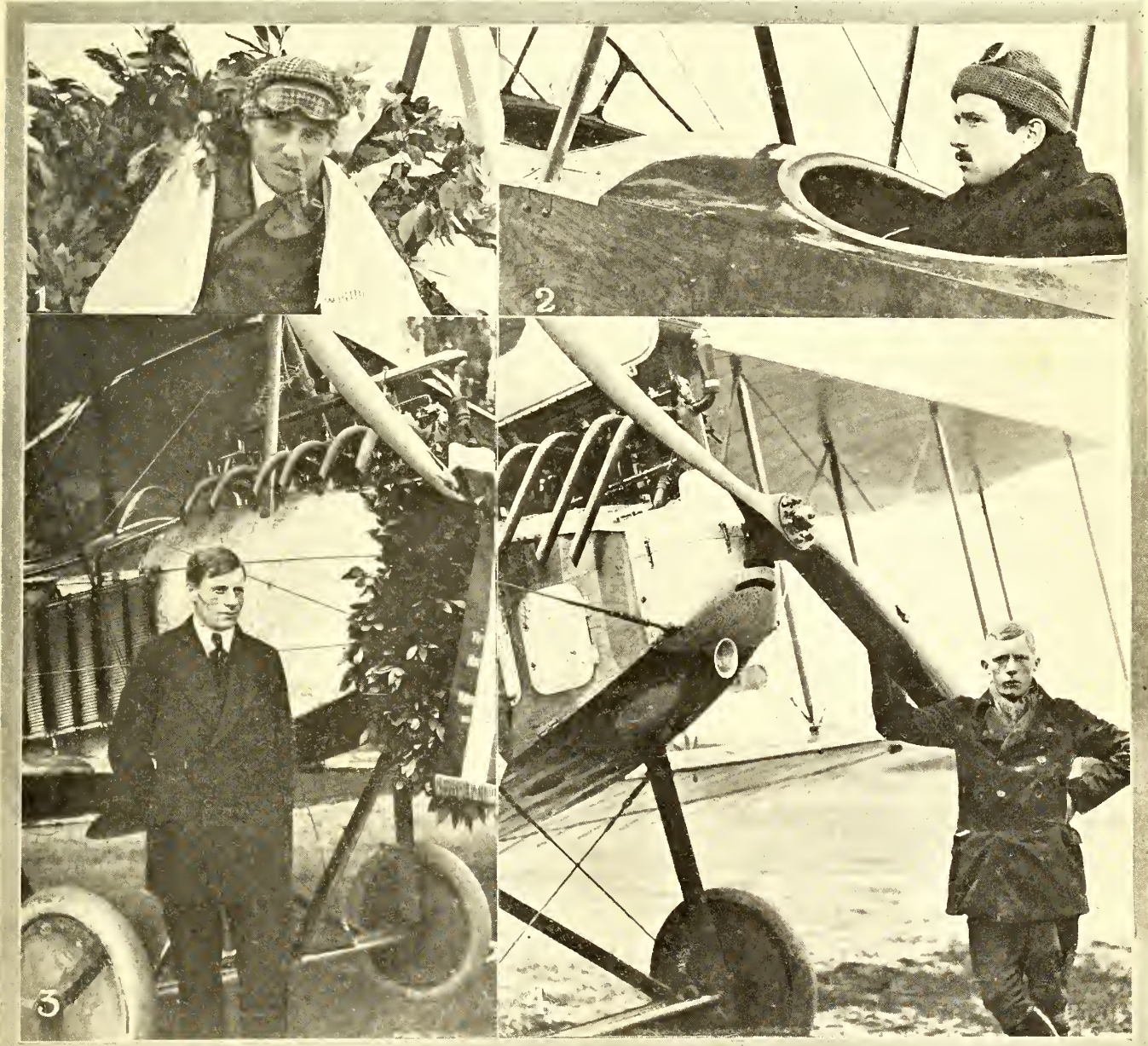
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O. AS A NEWSPAPER.]

WEDNESDAY, JULY 29, 1914.

No. 5

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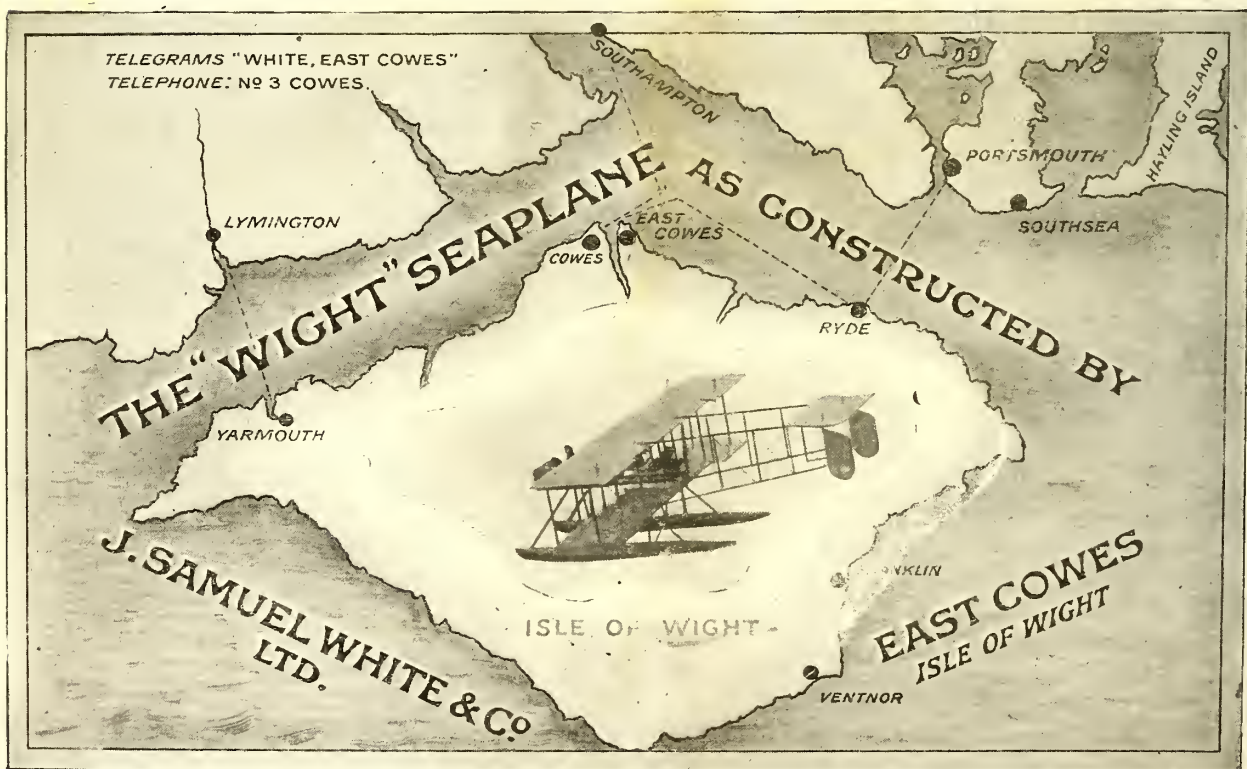
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The Work of the A.I.D.

When the wild-eyed inventor who has managed to produce a more or less successful flying machine, or the maker of practical aeroplanes, or the mere commercial manufacturer who has copied one of someone else's designs, wishes to sell his products to the Army, almost the first people with whom he comes in contact are the officials of the Aeronautical Inspection Department. This department is at present very young and very small, but in the logical course of events it is bound to become an establishment of very great importance, and already its place in the scheme of things is such that it is well for those concerned with the manufacture of aircraft to know something of its system of working. This system is bound to expand and become elaborated in the near future—the sooner the better—but the basic principles must remain the same, so it is perhaps not too soon to give some idea of how the inspection of aircraft is carried on. Also, the draughtsman or foreman in an aeroplane shop to-day may be the works-manager of to-morrow, and he will be none the worse for becoming acquainted now with some of the methods of inspection with which he will be brought into closer contact in the future.

At present, when no one really knows to what strains and stresses an aeroplane may be subjected, every maker of aeroplanes is doing his best to produce a thoroughly safe and sound machine, but even the best of us make mistakes at times, and each maker, being busy on his own work, knows comparatively little of the details of aeroplanes made elsewhere. The A.I.D., on the other hand, is composed of men who have been, and are now more than ever, constantly handling machines of various types, and therefore its staff has been able to acquire knowledge of what is good and what is bad in many different makes, and so can locate weaknesses which may not be apparent to the maker himself. In this way the Department is already doing excellent work in improving the breed of aeroplanes all round.

In the future, when pure commercial competition takes a bigger part in the production of aircraft for the Army, the Department will doubtless find itself well occupied in preventing the pilots of the Military Wing from being endangered through scamped work and profit-making methods of production. To-day its place is that of a guide, philosopher and friend to the aeroplane manufacturer who is really doing his best to supply the Army with conscientiously built aeroplanes, hence its initials, A.I.D., have a dual significance, and one hopes that the friendly way in which it now carries on its dealings with the manufacturer will become the rule of the Department.

After all, a Government establishment is very like any other animal. If a pup is spoilt by bad handling in its youth it grows up with a bad temper, and ends by biting the person responsible for its up-bringing. Similarly a Government establishment depends for its general tone, which ultimately hardens into a tradition, on the people who have the organising of its early days. It is thus that one finds it agreeable to do business with some departments and disagreeable to deal with others, in all branches of the King's Services. Judging by the opinions of those who have so far had business transactions with the A.I.D.—as it is generally called—the prospects for the future of the young department are distinctly encouraging.

Selling an Aeroplane.

First of all, I think I may safely say that despite the obvious advantages to the Army of complete standardisation of all military aeroplanes into perhaps half a dozen types, there is no definite intention of fixing those standards for a good many years to come, for those responsible for the equipment of the Royal Flying Corps realise fully that both the design and construction of aeroplanes are still a very long way from their ultimate state of development, and that anything which fulfils certain necessary requirements and offers advantages of its own is worth buying and worth trying. This alone is sufficient encouragement to any constructor to go on and produce something better than anything at present existing.

But it must be remembered that it is useless, and obviously foolish, to expect the Army to buy any machine which is not in one way or another better for some specific military purpose than anything at present in use. Either it must be faster for its power, or it must be better for observation, or it must afford a better field of fire, or it must be safer to land in enclosed country or on rough ground, or it must be easier for an average pilot to fly, or it must be easier to assemble, or it must be less liable to get out of order and lose its flying qualities. In fact, like any goods offered for sale to the general public, it must have "talking points." And the A.I.D. is there to see that it makes good on those points, as well as being of sound design and construction.

Assuming that a manufacturer has produced a machine which he believes to offer some advantages to the Army, his first official step is to approach the Department of Military Aeronautics at the War Office and submit his designs and "stress-diagrams" for inspection. Perhaps I may explain, for the benefit of the uninitiated, that stress-diagrams are a series of diagrammatic drawings of the wings, with the spars, struts, and bracings all marked with their sizes and with the stresses which the maker's tame mathematicians calculate will be put on those particular spars, struts, and bracings, when the aeroplane is flying straight and right side up with its normal full load, and the strength of the said spars, struts, and bracings must be such as to give a sufficient factor of safety when the machine is subjected with full load to any shocks it is likely to encounter in the air whether right side up, upside down, sideways, or any other how. The methods of these "stress-merchants"—as they are called by the unscientific—are beyond my limited comprehension, but the calculations seem to come reasonably near the results of practical tests, so the said "stress-merchants" seem to justify their existence.

Apart from these official steps, the wise constructor will also take the opportunity of impressing the flying qualities of his machine on the officers of the R.F.C., for the actual pilots have a great deal to say to the purchase of machines. The Department of Military Aeronautics is not likely to buy aeroplanes which the pilots dislike, and on the other hand, if a number of pilots particularly desire to fly machines of a certain type, that desire is transmitted through their Squadron Commanders to R.F.C. Headquarters and thence to the War Office. For this reason a good aeroplane which is thoroughly well advertised by means of successful attempts on records, by long cross-country flights, or even by good displays at aerodromes where flying officers so often spend "bus-men's

holidays," is likely to be bought even before a better machine which is less well known.

As a rule, the flying officer is young, and he is always a sportsman, so he has the same wish to fly a machine of a record-breaking type as he has to drive a car of the same make as the latest "Grand Prix" winner; in fact, many of them would rather own a ten-year-old racing car with a history than the most luxurious modern touring car. After all, the flying officer is the actual customer, for he is the user of the aeroplane, and he naturally gets what he wants, subject to its usefulness for military purposes being approved by the Director-General of Military Aeronautics, and its fitness for use being passed by the A.I.D. Thus one sees that the idea that the manufacturer of aeroplanes for the Army has only one customer, namely, the War Office, is very far from being true.

The First Tests.

The stress-diagrams having been delivered to the War Office, these diagrams are then examined by the designing staff of the Royal Aircraft Factory, to see whether any inherent weakness is to be found in the design. If such weakness discloses itself the constructor is duly informed and is asked to submit a new design strengthened at this point. As a rule the present-day constructor not having unlimited confidence in his own "stress-merchants," is only too glad to have any possible weakness pointed out, and he puts it right with pleasure and alacrity, but if he disagrees with the criticism it is always open to him to submit that particular part to a practical test under supervision of the A.I.D.

It is only in this matter of the stress-diagrams that the R.A.F. enters directly into the purchase of machines designed and built by independent constructors, and I have never heard of any maker seriously disputing the justice of any demands made for increased strength at this stage of the proceedings, for the average modern aeroplane has so much excess lift that it can afford to carry a little extra weight when it is asked for in the interests of increased safety.

In time, no doubt, as the department grows, the A.I.D. will have its own examiners of stress-diagrams, for such work appears to come definitely within its sphere of influence rather than within that of a Government experimental department, but in the meanwhile the arrangement seems to work smoothly enough.

Assuming that the general design and the stress-diagrams are passed as suitable for military purposes, the next step is for a complete machine to be submitted to the A.I.D. for tests. The machine is sent to Farnborough, where it is inspected in a general way by the A.I.D. staff, and put through flying tests. According to its class—that is to say, whether it is a fast scout, a reconnaissance machine, or a fighting machine,—it has to do a certain minimum high speed and maximum low speed, and it has to climb at a certain minimum rate with the specified load, all as set forth in the War Office conditions published some months ago. These are all quite moderate demands, and a decent machine should exceed them handsomely if its maker hopes for orders in any quantities. It also has to pass a somewhat severe test of its ability to roll under its own power over rough ground. This test is an unfortunate necessity, for machines on active service cannot expect to land in or start from prepared aerodromes. Still, a skilful pilot can get through it, even on a scout with a chassis consisting of two wheels and four light tubes. At any rate, it is an inducement to manufacturers to employ high-class pilots.

Constructional Tests.

Having passed its flying tests, some people might argue that the machine should then be bought by the War Office. It is here that other considerations come in. It has to be discovered whether the flying officers want the machine or not, and here the wise constructor who has previously advertised his machine saves himself a good deal of time and trouble. But, here also, the question of detail design arises, and this is in practice purely a matter for the A.I.D. to decide. There are no stress-diagrams for fuselages, or tail-booms, or tail structures, or rudder posts, or seat bearers,

or control lever fitting, and the fitness of all these things for their work has to be decided by plain rule-of-thumb methods, which is where the practical man with real experience scores. Also it is where difficulties arise owing to there being no possibility of proving anything by figures.

If the A.I.D. thinks a fitting is not strong enough, and the maker thinks it is, the settlement of the argument calls for some tact on both sides, and, as the A.I.D. always has the whip-hand, it speaks well for the staff that one hears no complaints of autocratic methods or incivility. On the other hand, the employees of various constructors who have work to do in connection with the A.I.D. speak most highly of the kindly assistance they receive, and seem only too happy to have a chance of doing work at Farnborough. When a criticism of a fitting is put in the form of a suggestion for its improvement, and not as a jeer at the foolishness and incompetence of its designer, it has a wonderfully soothing effect, especially when the designer knows he is in the wrong. Still, it is occasionally necessary to destroy a building in order to build another on a sounder foundation, but when such a necessity arises one may be sure the blowing up will be done in the most courteous manner possible. At any rate, any constructor may rest assured that if any part of his design is condemned by the A.I.D. it is simply with the idea of making flying safer for the pilots of the R.F.C.

Examination of Parts.

When a sample aeroplane has been duly approved by the A.I.D. and has satisfied the Department of Military Aeronautics to the point that orders are placed for a batch of similar machines, examiners appointed by the A.I.D. are sent to the maker's works to watch the process of manufacture. The raw material is examined, and the samples of it are sent from time to time to the A.I.D. office at Farnborough for test. Wood, metal, and fabric are tested on special testing machinery. At present this is done in the Royal Aircraft Factory, as the A.I.D. has not yet set up testing plant of its own. Each sample simply bears a number, and there is no clue to its origin, so that no preconceived ideas as to the merits or demerits of any particular material or its source of supply can influence the tests. The reports of the tests are returned to the A.I.D. office and the material is either passed or condemned. By this means a continuity of quality in material is ensured.

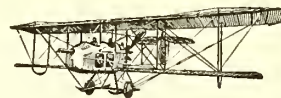
The examiners also watch the finished parts, such as struts, sockets, metal clips, spliced wires, and so forth, going through the works, and all of these parts which are stampable are duly stamped by the examiners, each of whom has a distinctive stamp, so that if any part in an aeroplane ever breaks through a flaw, or through bad workmanship, it can be traced to the examiner who passed it. In this way, one comes as near reaching the production of aeroplanes of absolutely uniform reliability as is humanly possible. Of course, there is the ever-present human liability to err, on the part of the examiner, which can never be eliminated, but, by selecting men of good character and mechanical training, this danger also is minimised.

When the machines are put together in their own works they are again examined, and are then delivered to the A.I.D. at Farnborough, where each passes a final inspection, as to workmanship and correct assembling, by the superior officers of the Department, and then goes through the regulation flying and rolling tests, in the hands of its maker's pilot. Then, if all is still well with them, they are accepted by the A.I.D. and are in due course handed over to the Military Wing or to the Central Flying School, whichever may be their allotted fate.

The system seems fairly drastic, and it might be full of red tape routine. In practice it is not, because it all depends on the spirit in which it is worked, and, fortunately, those at the head of affairs depend more on human intelligence than on rigid calculations and machinery.

Tests to Destruction.

In addition to all the tests mentioned above, one machine of each new type is tested to destruction. This is a test which



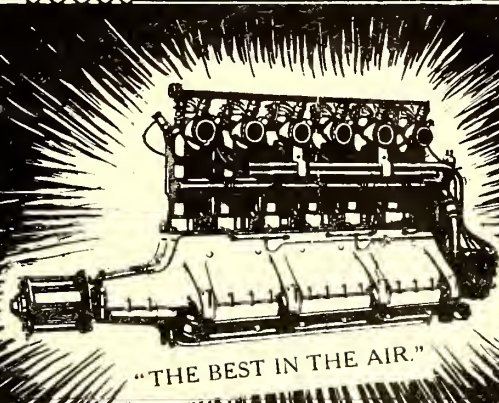
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has often been advocated in this paper as the only true proof of calculated stresses.

The machine to be tested is turned upside down on a trestle arrangement, and the wings are loaded (on the under side, of course) with small shot in bags. These distribute the load fairly over the wing, or they can be piled over any particular portion it is desired to test. In usual practice the machine is arranged so as to cause a backward stress similar to that put on a wing by its own head resistance. When the weight approaches what is supposed to be breaking point, smaller and smaller weights are put on till finally the last straw is reached and something gives way. While the weight is nearing the point of collapse various measurements are made, and at least one main wire which carries a load when flying is cut.

These tests are made in the Royal Aircraft Factory, but are under the supervision of an official of the A.I.D., and the constructor of the machine to be tested is always asked to send a representative to watch the test.

Afterwards the wrecked machine is rebuilt by the maker at the expense of the British taxpayer, but if all money were as well spent the country would be a good deal richer than it is. As a rule no damage is done except to the wings, and a new pair does not cost much, but even if the whole machine was destroyed it would still be worth while. Actually, I gather, one or two machines have been tested to destruction all over.

In this way the weak points of a machine can generally be discovered, and so the maker is materially helped, without cost to himself, in producing a machine which is of actual uniform strength throughout. These tests are very educative to watch, for a weak spot is sometimes disclosed in a very unexpected place, and then one learns more than if a machine gives way apparently all over at once, as I hear one did the other day.

One gathers that the German system is even more elaborate. There supports are placed under the wings, but not touching them. Then when anything goes, instead of the whole affair collapsing, the broken part is caught by the supports, and is held in position while the loading is continued little by little, sand being distributed pinch by pinch over the rest of the wing till another part breaks and is in its turn supported till the whole wing has been broken in so many places that there is practically no chance of any weak part being missed. This method takes much time, but it avoids the possibility of one part giving way and letting the whole thing down with a crash, and destroying all evidence of the order in which the breakages occurred.

Here I would like to revive an old suggestion of mine, namely, that the constructor of each machine should name a breaking load before the destruction test starts. If the machine breaks below that load the constructor should repair the

machine free of cost, if it breaks above the load the Army should pay. It would increase the constructor's care, or rather his carefulness, and add a sporting interest to the test.

Engine Tests.

Engines which are bought separately from machines are subjected to a full-power test with standard propellers, but those in machines are reasonably considered to have had sufficient testing when each has driven its machine through its flying tests. When engines are being built in England in quantities for the R.F.C., or for machines for the R.F.C., they will presumably be subject to the same system of examination in their own works as are aeroplanes, so that the staff of the Inspector of Engines will be pretty nearly as large as that of the Inspector of Aeroplanes. At present, unfortunately, there is less for it to do, but we live in hopes. Presumably, as in the case of aeroplanes, sample engines of new types will be tested to destruction by the Inspector of Engines.

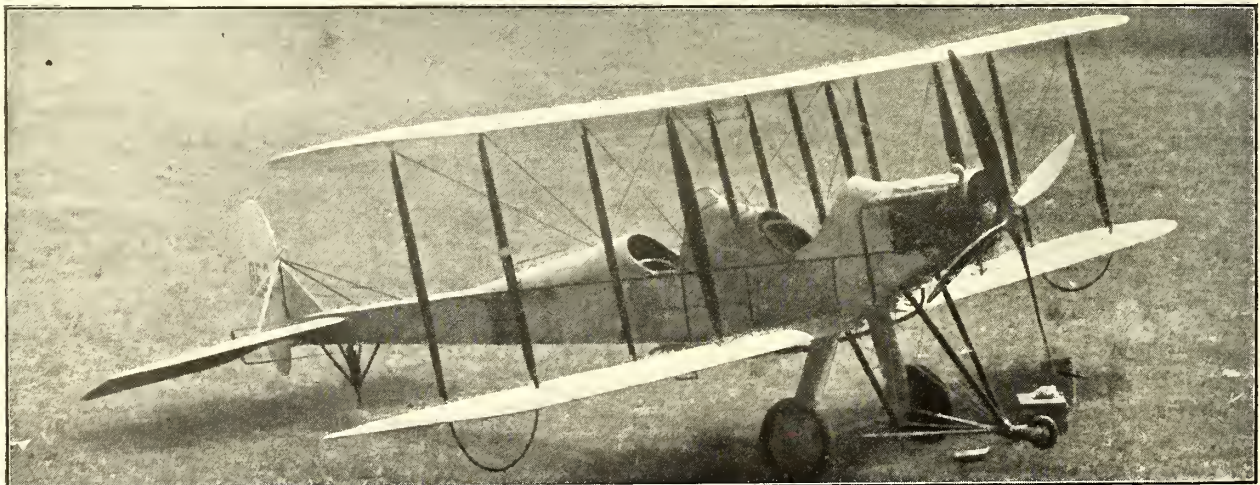
R.A.F. Aeroplanes.

Aeroplanes which are being built under contract to the designs of the Royal Aircraft Factory are subject to the same system of examination in the makers' works as are all others.

When completed they are delivered by the makers to the R.A.F. instead of to the A.I.D., and are flown by the R.A.F. pilots instead of by the makers' pilots. The R.A.F. then tunes up the engines and adjusts the machines, which vary considerably in weight and flying capacity despite their all being built to the same drawings and gauges, and the R.A.F. pilots then put them through their tests for the A.I.D. In fact, so far as machines are concerned, the system works just as if the R.A.F. supplied machines as any ordinary firm does, and sublet the contracts.

The A.I.D. at Work.

With the kind permission of Brigadier-General Sir David Henderson, K.C.B., Director-General of Military Aeronautics, I paid a visit to the A.I.D. at Farnborough a few days ago. The head office of the Department has been established temporarily in an "eligible semi-detached villa residence," worthy of Balham or Upper Tooting. Here Major J. D. B. Fulton, C.B., R.A., Chief Inspector of Aeronautical Matériel, and the heads of his two sections, Mr. G. B. Cockburn, Inspector of Aeroplanes, and Captain R. K. Bagnall-Wild (late R.E.), Inspector of Engines, and sundry members of their staffs, have their being for the greater portion of the day and night, except that Captain Bagnall-Wild varies the monotony of villa life by spending some hours per day in the tin shed where the Naval and Military Engine Competition, like the late Mr. Pope's famous Alexandrine, "like a wounded snake drags its slow length along."



The B.E.2 with the rudder-post somewhat adequately stayed, and with a new oleo-pneumatic chassiss.

One gathers that commodious offices, and sheds for the acroplanes under inspection, are to be built for the A.I.D. somewhere at the back of the airship sheds. Judging by the steady increase of work at present, consequent on the rapid expansion of the Royal Flying Corps under the new régime, there seems no prospect of the offices being unnecessarily large.

The acroplanes at present under inspection are housed in sheds on Farnborough Common lent to the A.I.D. by the Military Wing. Here one found a small but efficient staff hard at work, not only examining machines, but getting into order a proper system of what one must, I suppose, call "book-keeping," by which, as soon as a machine acquires a separate entity by being given an official number, every incident in its career can be traced from its beginning to its final dissolution, including every repair job done to it, and every part supplied for replacement; also, be it noted, *every delay in its use caused by a manufacturer wasting Government time by hanging up the delivery of spare parts of machine or engine.*

Several machines which had been duly accepted from the makers were being altered in detail by the makers at the expense of the R.F.C., and some old ones going back for rebuild were also in the A.I.D. sheds, the A.I.D. thus acting as an intermediary between the Military Wing and the constructors.

I am told there is, ere long, to be a proper Stores Department for the R.F.C., which would, if it existed, take over machines under these last conditions. This stores section, which will be in charge of Major Davidson, R.E., Army Ordnance Department, will necessarily work in close alliance with the A.I.D., for all spare parts for the Military Wing must of necessity be passed by the A.I.D. before they can

be put into store, and also, one hopes, there will come a time when whole aeroplanes will be held in store (fire-proof, damp-proof, and mouse-proof), ready for use in ten minutes after they are handed over to the Military Wing—but that is looking forward to the happy time when aeroplanes fit for active service can be produced rather more quickly than the Military Wing breaks them, or (shall we say?) when aeroplanes are so improved that they do not break up so easily.

Meantime there is much work for the A.I.D. to do. It has made an excellent beginning, and the right men are everywhere in the right places. It is doing its best to encourage the "Trade," and if any manufacturer falls foul of it most people will take a good deal of convincing that it is not the manufacturer's own fault. If the A.I.D. says it wants something altered in a machine, or that it does not approve of a certain fitting, I am prepared to bet on the A.I.D. being right, and, what is more, reasonable, in its requirements, because the men at the head of affairs know a great deal more about aeroplanes and engines than all but perhaps a dozen individuals among all the firms who are making such things to-day. One is not dealing with soldiers who never saw an aeroplane till someone took them to an aerodrome one day last year or thereabouts, but with men who were flying and smashing and repairing their own machines in 1909 and 1910, and with men who had more than a nodding acquaintance with petrol engines for a good many years before that.

Beyond question, the creation of the A.I.D. was the best thing that could possibly have happened both for the safety of the pilots of the Royal Flying Corps and for the financial welfare of the Trade. As the Military Wing grows, the A.I.D. will grow with it, and its present duties must become largely multiplied. One can only wish that it may be as happy in its growth as it is in its beginnings.—C. G. G.

Honour Where Honour is Due.

Now that the Test Mobilisation of the Fleet is over, and the Navy's work is returning to its normal channels, there will, doubtless, be a certain amount of recognition accorded to those who have contributed to the success of the display, and to those whose good work beforehand made such a display of sea-power possible. One hopes that when those in high places set about compiling the honours list the excellent work done by the Royal Naval Air Service will not be forgotten.

Already the Air Service has been given a few honours, but one cannot help feeling that, considering the amount of work the Navy has done, it has not had quite its full measure of reward, especially in the way of special promotions. The Royal Flying Corps, including the Military Wing and the various other sections coming under the general head of Military Aeronautics, has, in fact, been much better treated, though one would not venture to say that even the Army has been quite adequately rewarded for its excellent work.

Of course, comparisons are odious, but if one premises that the Army deserves still more than it has got, there can be no offence in pointing out how much better the War Office treats its people than does the Admiralty.

- HONOUR
WAR OFFICE.
- K.C.B. Brig.-General Sir David Henderson (Director-General of Military Aeronautics), K.C.B., D.S.O.
- C.B. Capt. Godfrey Paine, C.B., R.N. (lent to War Office) (Commandant, Central Flying School.)
- Major Fulton, C.B., R.A. (Chief Inspector of Aeronautical Matériel.)
- Major Trenchard, C.B. (Asst.-Commandant, Central Flying School.)
- Mr. O'Gorman, C.B. (Supt. R.A.F.)
- SPECIAL PROMOTION.
- Lt.-Col. Sykes (Commandant, Military Wing)—2 Brevets, Capt., to Lt.-Col.
- Lt.-Col. Maitland—Capt. to Major by Brevet, and thence to temporary Lt.-Col.
- Majors Brooke-Popham, Burke, Raleigh, Salmond, Becke, and Longcroft—Capt. to Major by Brevet.
- Major Gerrard, R.M.L.I. (lent to C.F.S.)—Capt. to Major by Brevet.
- Majors Carden and Musgrove—Capt. to temp. Major.

- Captains Conner, Waterlow, Reynolds, Fox, Waldron, Stopford, Carmichael, Harvey, Soames, and Holt—Lieut. to temp. Capt.

ADMIRALTY.

- C.B. Capt. Murray Sueter, C.B. (Director of the Air Department.)
- SPECIAL PROMOTION.
- Capt. Schwann—Commr. to Capt.
- Capt. Scarlett—Commr. to Capt.
- Commander Samson—Lieut. to Acting Commr.
- Commander Osborne—Lieut.-Commr. to Commr.
- Lt.-Commrds. Longmore and Seddon (Squadron Commanders)—Lieut. to Acting Lt.-Commr.
- Major Gordon, R.M.L.I. (Squadron Commr., R.N.A.S.)—Capt. to temp. Major.
- Squadron Commander C. E. Risk (Squadron Commr., R.N.A.S.)—Capt., R.M.L.I., to Squad. Commr.
- Squadron Commander I. T. Courtney—Lt., R.N., to Squad. Commr.
- Squadron Commander C. L. Courtney—Lt., R.N., to Squad. Commr.
- Flight Commander Rathborne—Lt., R.M.L.I., to Fl. Commr. (corresponding to Capt., R.M.L.I.)
- Flight Commanders Babington and Hewlett—Junior Lieuts. to Lieuts., R.N., of 4 years' seniority, corresponding to Capt. in Army.
- Flight Commander Travers—Acting Lt., R.N.R., to Fl. Commr., R.N.A.S.

Altogether 26 War Office honours as against 14 from the Admiralty, and even then the latter figure includes several which are not actually promotions, but merely appointments to new ranks in the Air Service, against which must be set other cases where officers of higher rank in the Navy occupy junior rank in the Air Service, though, to a degree, similar cases occur in the Army, when temporary Captains are Flight Commanders, and as such are in command of substantive Captains who are only Flying Officers. However, whichever way one looks at it, the Navy is, on balance, worse off than the Army, so that, while admitting that the Army deserves more than it has got, the Navy appears to have had considerably less still, which is not altogether as one would like to see it.—C. G. G.

Brooklands Revisited.

BY W. H. SAYERS.

The stress of a continued course of Advisory Committee reports interleaved with excursions into the realms of prophecy having produced that condition of acute disinclination for serious thought so prevalent at this present season, led me to consider a short stay in the country as a tonic. Being an habitual taker of busman's holidays, this country visit naturally resolved itself into a week-middle at Brooklands, where a regular epidemic of new and interesting machines, or machines that are to be, seems to have broken out.

Further, the atmosphere of the "Blue Bird" when depleted of week-end visitors and in sole possession of the "indigènes" has a rejuvenating effect on the temporarily returned exile, and little stories of pupils' exploits reminiscent of far-off days help to lighten the seriousness of existence. The pupil who switched off his motor because he thought his box-kite was climbing too fast, for instance, might well have been one of the heroes of 1910, and his ingenious cure for this uncommon complaint appears to have been successful, if a little far-reaching in its effects. Whether it was the debris produced on this occasion or that resulting from some other effort of misdirected ingenuity is not quite clear, but some similar untidy pile of what had been a school biplane is recorded to have acted the part of red rag to the bull of a "taxi" monoplane, which despite its driver's efforts insisted on charging and trampling on the battered fragments.

But these be but idle tales, and though fortunately the comic relief is ever there for those who seek it, Brooklands has more of serious experimental work to show.

Of new machines the Martin-Handasyde "Trans-Atlantic" probably attracts the greatest general interest. The parts thereof are well advanced, and erection is progressing apace in the specially large shed built for that purpose. The outer sections of the wings are now in place, and some idea of the colossal size of the machine can be obtained. Various minor alterations have been made in the design since the description of this machine was published, but in all essentials that description has been adhered to. The most striking feature of the partially erected machine is the grace of its general outline, and it is only when one gets quite close that its actual size dawns upon one. The workmanship is, of course, of the very finest, and it is to be hoped that one at least of the many current rumours of negotiations for the purchase thereof will

prove to be well grounded, as it would be a thousand pities were so much excellent work to be wasted to swell the Brooklands' scrap-heap.

The Martinsyde firm's activity is not confined to the Trans-Atlantic machine and its duplicate in spare parts, for their all-steel propeller biplane with a 60-h.p. Antoinette engine is rapidly approaching completion and should be ready for test in a few days. Built entirely of steel, except for the wing spars and ribs, this machine is on standard "pusher" lines, but shows much originality in detail and may be expected to give an excellent account of itself. Also the prevalent habit of "scout" building appears to have infected this firm, and a miniature tractor biplane of very taking design is now on the stocks in their sheds.

As in all other Martinsyde machines, robustness of construction and excellent workmanship are the outstanding features of those parts already made, while the firm's characteristic ingenuity is displayed in the design of some of the fitments.

The D.F.W. range of sheds also present many features of interest, as in addition to the machine which Herr Roempler and Mr. Dukinfield-Jones have shown to such advantage in the air, a military two-seater of the latest type has now arrived from Germany and is in course of erection. This machine resembles the older one in no way whatever, other than that both are tractor biplanes, and both are excellently made and finished. The fuselage is entirely built of Swedish charcoal steel tubes welded up by a special process and wire braced, and is of rectangular section with a rounded top. The framework is covered in with aluminium sheeting and fabric to a beautifully clean streamline form, and the centre struts for the upper planes are built into the fuselage structure. The chassis also is entirely of steel and is of the same general type as the Morane, and appears to combine immense strength and very low head resistance.

The wings differ greatly in form from the older type as they are of much higher aspect ratio, much less swept back, and are enormously staggered. The wing spars are of steel tube, and there are four pairs (two a side) of steel tube interplane struts. These are fitted with a very simple lever attachment to the wings which is absolutely secure when in position, yet may be released and permit the detachment of the wings in a few seconds without detaching or altering any wiring.



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THE BEST STARTING AND LANDING PERFORMANCES at the Vienna Meeting were made by M. Chanteloup on a CAUDRON BIPLANE.

Telephone: 50 Kingsbury.

The machine was not completely assembled at the time of my visit, but it promises to be one of the finest looking aeroplanes yet seen in this country. The span is 52 ft., the machine weighs (empty) 1,200 lbs., and carries pilot, passenger and ten hours' fuel. Tested with a Mercédès engine in Germany a speed range of 84 to 42 m.p.h. and a climbing speed of 450 feet per min. were attained, but with the Beardmore-Austro-Daimler motor of lighter weight and greater output, which is to be fitted, it is expected that these figures will be considerably improved upon.

In the adjoining sheds work is progressing at a great pace on the British-built seaplane for the "Daily Mail" circuit. This machine is of exactly the same type as the German-built machine mentioned above except that wooden wing spars are used instead of steel. Despite having to work against time, the workmanship in this machine is wonderful, and Mr. Kny is to be congratulated on the work turned out under such difficult conditions, which augurs well for the future when his works are properly organised.

The Sopwith sheds are, as usual, busy with new "scouts" for the Army—and with the overhaul of the dual control 80-h.p. two-seater after its long and useful career.

Mr. Hawker's original scout in a new guise is an interesting inhabitant of these sheds, as it has now been fitted with a pronounced dihedral on the lower plane and a balanced rudder, while the tail fin and the covering of the rear half of the fuselage has been removed. The dihedral appears to have added appreciably to the lateral stability while the other alterations have made the directional controls much more powerful—at some sacrifice of inherent directional stability probably—but with a pilot of Mr. Hawker's calibre and with a reliably built and fitted rudder and control gear the advantage may outweigh the disadvantage. Certainly few machines loop more cleanly than does this one in Mr. Hawker's hands.

Another interesting visitor to these sheds was the machine built for the "Seaplane Circuit" and driven by a British built 100-h.p. monosoupape Gnome, which fitted with a land chassis went through its preliminary tests during the latter part of last week. On very much the lines of the smaller scouts, but with much increased span and overall length, this machine shows a remarkable turn of speed and climbing rate, and should be a formidable competitor. This machine has now returned to the works to be fitted with its floats.

A Welcome Acceleration.

Nearly a year earlier than one had expected it, the Report of the Advisory Committee for Aeronautics for 1913-14 has just been published. True, it is only the general report of the Committee itself, and is not accompanied by the detailed reports of actual experiments on which it is based; but it seems reasonable to infer that the latter may be issued before they have become obsolete.

From the Committee's report it appears that the equipment of the Aeronautical section of the N.P.L. has been augmented by the construction of a further small wind channel, and that a large one wherein high air speeds may be used is well on the way to completion.

Experiments on aeroplane wing models have been continued, which confirm the results previously obtained that the efficiency of wings increases with increase in air speed, and the assumption that the position and movement of the centre of pressure on full-size wings would be sensibly the same as that on small models, also appears to be justified. Experiments on wings with turned-up trailing edges have continued, apparently without appreciably better results than the previous ones.

At the request of the Superintendent of the R.A.F. experiments on wings whose camber can be varied in flight, by hinging the portion of the wing behind the rear spar have been carried out, and it has been found that a greater speed range, and a higher climbing speed can be obtained, and that hinged rear sections might be used as air brakes.

Experiments have been made, at the request of the Admiralty, as to the effects of fitting the upper plane only of a biplane with ailerons, ailerons on lower planes being inadvisable for sea work. Other experiments were made as to the effects of side winds on aerofoils, and included those on a wing with a washed-out angle of incidence towards the tip.

In the shed next to the Sopwith range is a new-comer—The Varioplane Company, who have under construction a monoplane of distinctly Blériot type as far as fuselage and chassis are concerned, with a tail of B.E.ish form and a 35-h.p. Anzani motor. It is understood that this machine is eventually to be fitted with wings of unique design.

In the Bristol sheds Mr. Creagh's tractor is a new-comer of pleasing aspect and excellent performance. This machine appears to have been designed for cross-country touring in comfort, as high speed has been sacrificed to a quick get off, high climbing, and a low landing speed, all of which desiderata have been successfully attained. With an 80-h.p. Clerget motor her top speed appears to be about 65 miles per hour, and her climbing speed is over 400 feet per minute.

A further interesting arrival is the latest Vickers gun-carrier, which may be regarded as the outcome of the experimental work carried out on the previous gun-carrier, and embodies the modifications in side area dictated by those experiences. The general characteristics are similar to the previous machine, and the work and finish are excellent. The nacelle is built up of steel tube welded up solid and is covered in aluminium at the nose and top and with fabric for the rest. All the plane struts are very carefully streamlined. Particular care has been taken with the control wire cables and pulleys, all of the latter being of large diameter, and the wires to the ailerons are so arranged that they lie in the same plane as the interplane bracing wires. The tail booms are strengthened with an extra liner over the inner bay as some protection against flying fragments of possible broken propellers. The machine weighs slightly under 1,200 lbs., carries 800 lbs. of useful load on a total surface of 390 sq. ft., and fitted with a 100-h.p. monosoupape Gnome has a speed range of 40 to 70 m.p.h., and climbs at 400 odd feet per minute. Mr. Barnwell states that she is extremely steady in a wind and very nearly inherently stable, and one gathers that it is proposed to develop this latter quality. Altogether this may be regarded as a first-rate example of the propeller type biplane, and Vickers Ltd. are to be congratulated.

Last but not least the Blériot works are a veritable hive of industry, some fourteen machines of the 80-h.p. tandem two-seater type being in course of construction for the Army, as well as sundry and various repair work on Blériots of various types and ages being in progress.

Experiments on complete model aeroplanes have been continued, and extended to a model of the B.E. type, which do not appear from the report to have shown any unexpected results. Mainly, such tests appear to have been directed towards obtaining stability data.

Experiments on model aeroplane bodies have also continued, and have been made on bodies with fins, rudders, tailplanes, and elevators, also to a model fitted with air brakes to determine the effect of flap air brakes on the rudder control forces. Experiments as to the relative resistances of square and round section bodies have been made, and of bodies fitted with various forms of wind screens for the pilot and passenger.

Much investigation into stability has been carried out, and a mathematical inquiry into the motion of an aeroplane in different forms of air disturbance has been made.

It is notable that the Advisory Committee apparently still refuse to recognise any other form of spiral instability than that due to too large a rudder and fin surface—though they acknowledge an instability, which they know by a different name, due to a forward centre of side pressure. Their name for it is "a tendency to increasing oscillation in roll and yaw with accompanying lateral motion," which is merely confusing confusion and concealing the facts.

The question of strength of construction is dealt with, and a detailed report on this point has already been published and reviewed in these columns.

Tests on propellers have been continued and very excellent results obtained with the R.A.F.'s 4-bladed propellers.

A six-bladed propeller with sheet steel blades has been tried, and promising results have been obtained.

Experiments have been made on the distribution of pressure on a cylinder and on the resistance of wires, and the question of the "law of dynamic similarity"—with the which is con-

cerned the question of the correction to be applied in adopting model results to full scale work—has been further inquired into.

Tests on balloon and aeroplane fabrics have been continued, and floats for seaplanes have been further experimented on.

The work of the R.A.F. during the year is reported on, and attention is duly drawn to the inherently stable machines produced there—to the improvement in structural strength achieved there (and quite time, too), and to the development of various instruments for use on aircraft.

Experiments on airships are mentioned, and statements of the naval seaplane work during the past year are included, it being suggested that the main improvements in float design are traceable to N.P.L. researches, and the statement that seaplanes, with folding wings, have been satisfactorily constructed is inserted in such wise that the uninstructed would gather that the Royal Aircraft Factory was responsible. It seems that the official mutual admiration society is liable to let its enthusiasm run away with it. It may, therefore, be well to state that the most serviceable floats at present in use are undoubtedly those on the Short and Wight seaplanes, and that the only folding-wing machines at present in use are Shorts, though one other firm at least has a folding wing in course of construction. The B.E.s with floats have been failures, and no folding-wing has yet been produced by the R.A.F.

Meteorological investigation of air conditions has been continued, and the results have been used in certain of the stability inquiries carried out.

The Seaplane Circuit.

It is now made known that the pilot of the Beardmore biplane is to be Mr. C. H. Collet, at the moment Lieut. R.M.A., and Royal Naval Air Service, who, one gathers, is leaving the Service to join the Beardmore firm. Mr. Collet is an exceedingly fine flier, as was shown by his flight from Plymouth and Grimsby without a stop, and by his various evolutions on the D.F.W. at Brooklands. He was also the first pilot of the Naval Air Service to loop the loop, which he did on an 80-h.p. Caudron. The Beardmore biplane is now rapidly approaching completion at Brooklands, and looks a very sound job. It will be fitted with Sopwith floats.

The Grahame-White biplane (100-h.p. monosoupape Gnome) should by now be doing its trials over Southampton Water. Its span is only 27 ft. 8 in., so it is distinctly of the class which, *pace* Messrs. Burroughs and Wellcome, is commonly known among aviators as the "tabloid," and should be very fast.

The Sopwith tractor (100-h.p. monosoupape Gnome) should also be flying by now. This is to be flown by Mr. Victor Mahl, with Mr. Kauper as passenger. As a land machine its speed is something like 80 m.p.h., and with floats it should not be much slower.

The Sopwith bat-boat should be out by the end of the week.

It will be flown by Mr. Pixton. The 225-h.p. Sunbeam looks an excellent job.

The Blackburn biplane, to be flown by Mr. Pickles, is making good progress. The 130-h.p. Salmson engine has been through all its tests without giving any trouble. It is remarkably free from vibration, and gives full power without being pressed.

The two Curtiss boats are nearly ready. The big twin engine boat, with the two 100-h.p. Austin-built Curtiss engines, to be flown by Mr. Loftus Bryan, should be out at Bognor Ly Friday, and the smaller one, with the 120-h.p. Beardmore-Daimler, to be flown by Capt. Bass, may be out slightly earlier.

The E.A.C. tractor, 110-h.p. Green, to be flown by Mr. F. B. Fowler, has been delayed in construction, but it is hoped to get it through a couple of days before the start. The engine has done very well on test, the machine is a very neat job, and Mr. Fowler has had much experience of water-flying, so that many people fancy its chances of winning.

The Avro has also been somewhat delayed in construction, owing to pressure of other work in the factory, but Mr. Raynham has every hope of getting it through in time for short tests before the start. With his skill and experience on all sorts of machines, Mr. Raynham should show up well in the race if the machine is ready.

Coming Events at Hendon.

The following events have been arranged in connection with the Hendon Aerodrome:—

August 1st (Saturday), August 2nd (Sunday), August 3rd (Bank Holiday).—Ninth London Aviation Meeting (three days); eight air races and "looping" displays, special exhibition and passenger flights.

August 8th (Saturday).—August Meeting.

August 9th (Sunday).—Special exhibition and passenger flights.

August 13th (Thursday).—Despatch Carrying Team Race.

August 15th (Saturday).—Second Hendon Meeting.

August 20th (Thursday).—Bomb-dropping Competition.

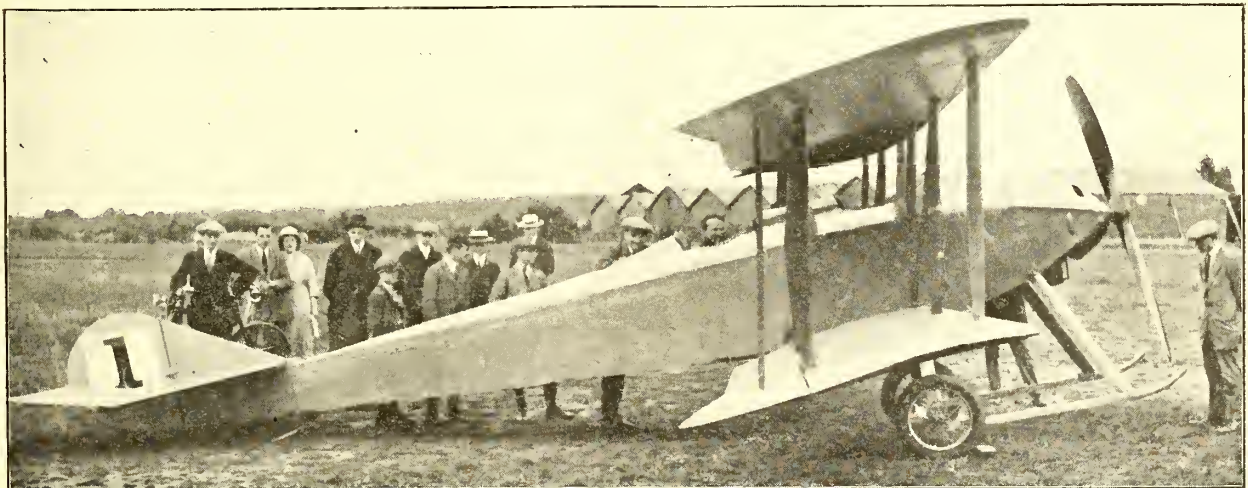
August 22nd (Saturday).—Collindale Meeting.

August 29th (Saturday).—Second August Meeting.

M. Eiffel's New Work.

On further acquaintance M. Eiffel's two most recent volumes entitled "Nouvelles Recherches sur la Resistance de l'Air et l'Aviation" prove to be a work which should be in the hands of everyone concerned seriously with the design of aeroplanes. The price of the book was recently stated erroneously to be £2. Actually, the price is £2 10s. Copies can be supplied from this office carriage paid at that price.

Another notable work which should be in the hands of all concerned with aviation is Commandant Duchêne's latest book, "Flying Without Formulae," price 7s. 6d., which can also be obtained at this office carriage free.



The Sopwith seaplane (100-h.p. Gnome) for the "Seaplane Circuit," under test at Brooklands with a temporary land chassis. Mr. Mahl in the pilot's seat, and Mr. Sopwith behind him.

Naval and Military Aeronautics.

GREAT BRITAIN.

NAVAL.

The King has by Order in Council approved of the scheme of grading and rates of pay for officers, warrant officers, and men of the Naval Wing of the Royal Flying Corps (to be designated the Royal Naval Air Service). Full details are published in the "London Gazette."

* * *

The following appointment was made at the Admiralty on July 23rd:—Commander R. M. Groves, to the "President," additional, for service in the Air Department, temporary, to date July 12th.

The following appointments were made at the Admiralty on July 25th:—Flight-Lieuts.—F. W. Bowhill, to the "Pembroke," additional, for duty at the Central Air Office; and W. C. Hicks, to the "Pembroke," additional, for Kingsnorth Naval Air Station, and for Naval Airship No. 3, both to date July 24th.

* * *

Since the departure of the fleet on Monday, various machines have left Calshot to return to their stations.

While returning from Calshot to Felixstowe on Wednesday of last week seaplane No. 115 (M. Farman, 100-h.p. Renault), piloted by Flight-Comdr. Rathborne, with Telegraphist Stirling, developed engine trouble off West Worthing. The pilot glided down, but the machine struck the water violently and collapsed, the occupants being rescued by boats from the shore.

On the same day, the Renault engine (100 h.p.) of the Maurice Farman piloted by Squadron-Comdr. Risk gave out at Shoreham, with broken gudgeon-pins, and had to be towed ashore. The third machine with a 100-h.p. Renault was unable to leave Felixstowe before the concentration at Calshot, so all the engines of this type have now accounted for themselves.

* * *

Seaplane No. 82 (Short, 100-h.p. Gnome) was towed into Dover on Wednesday night and beached by a party from the gunboat "Blazer." The engines had given out in the Downs, off the Foreland. The seamen stated that another seaplane was also damaged off Kingsdown, but that the occupants are safe. The "Blazer" and the t.b.d. "Fervent" remained at Dover while the seaplanes were returning from Spithead to their stations.

* * *

Starting from Shoreham on Wednesday on a 50-h.p. Avro,

Flight-Lieut. Littleton made a spiral descent out of control from 100 ft. and wrecked the machine. The pilot received slight cuts on the head.

* * *

While flying across country from the Central Flying School on Monday Flight-Lieut. C. Draper came down owing to engine trouble. The machine was wrecked, and he received injuries to his head. The aeroplane descended close to Salisbury Racecourse, and immediate attention was given to the injured pilot.

* * *

On Monday of last week at Eastchurch Short No. 152 (80-h.p. Gnome) made several flights. On Tuesday, Shorts Nos. 1, 34, and 152 (all 80 Gnomes), and Caudron No. 45 were out. On Wednesday, the same four machines flew. The following day Shorts Nos. 1, 34, and 152, and Avro No. 41 (100-h.p.) were in use. On Friday, Short No. 152 was the only machine out. No naval flying took place during Saturday and Sunday.

* * *

The seaplanes attached to the Felixstowe Royal Naval Air Station were at Calshot during the greater part of last week. On the 22nd, Flight-Lieut. Nanson arrived on M. Farman No. 95 (130-h.p. Salmson), this being a new machine for Felixstowe. Strong and gusty winds prevented any flying on the 23rd, 24th, and 25th.

* * *

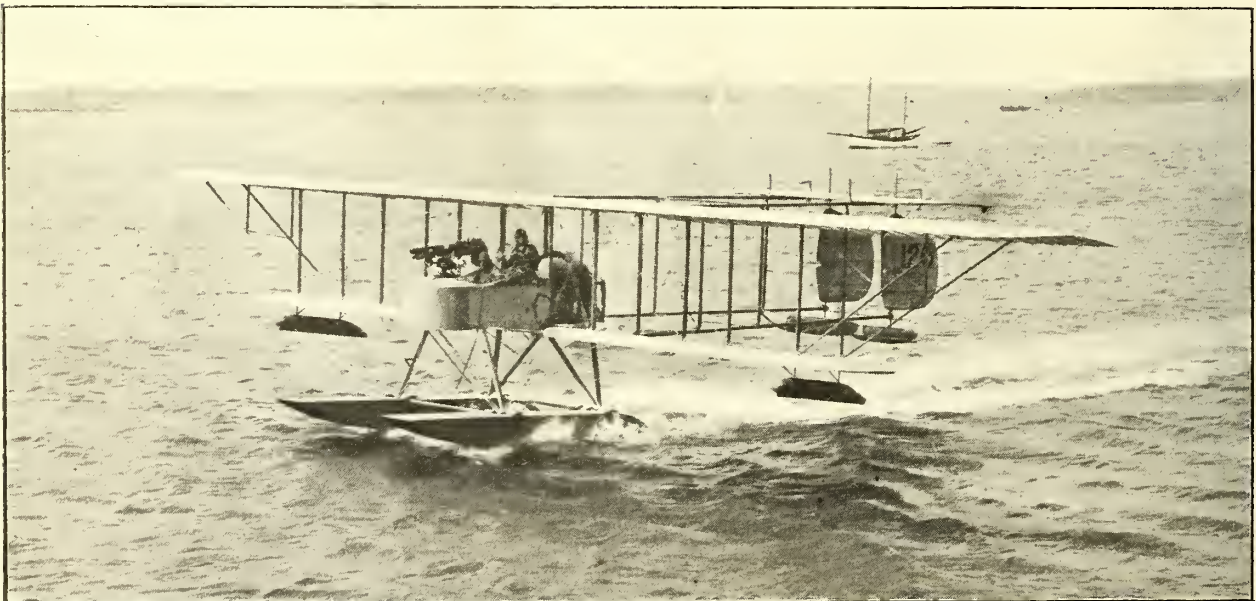
The Short biplane No. 126, which is illustrated herewith, has the distinction of carrying the biggest gun yet used on an aeroplane. This is a 1½-pounder quick-firer. The machine is driven by a 160-h.p. 14-cylinder Gnome engine. Excellent practice has been done in firing from this machine at targets both in the air and on the sea.

MILITARY.

The following communiqués have been received:—

Royal Flying Corps Military Wing.—Programme of work for week ended July 17th, 1914:—

No. 2 Squadron (Montrose).—No. 2 started on their return journey to Montrose on July 13th; reached Lincoln that evening, and left for Scarborough the following day. They have since been detained at Scarborough by heavy rain. The machines, transport and personnel are moving together as on the journey down from Montrose to the Netheravon Camp at the end of May.



The new Short Gun-carrier, 160-h.p. Gnome, with 1½-pounder quick-firer—the biggest gun yet fired on an aeroplane.

Nos. 3 and 4 Squadrons (Netheravon).—These two Squadrons have been engaged daily in carrying out the course of instruction for 10 officers drawn from regular units and in observation of artillery fire. The course is progressing satisfactorily.

No. 4 Squadron has also done some night flying and a convoy run by night by the whole Squadron Mechanical Transport.

No. 5 Squadron (Fort Grange).—No. 5 Squadron is busy getting settled in its new station, Fort Grange. Machines are being flown over from Netheravon and Farnborough as temporary tent sheds are erected for housing them. It is expected that work on the permanent sheds will be commenced almost at once.

No. 6 Squadron (Farnborough).—Pilots were out daily engaged on observation work in connection with the training of the 1st and 2nd Divisions. This Squadron should be completed in personnel in another two weeks' time by drafts from the Recruits' Depot.

Nos. 1 and 7 Squadrons (Farnborough).—The organisation of these two new Squadrons is progressing. No. 1 Squadron will receive one complete flight in personnel (less officers) from No. 2 Squadron as soon as the latter arrive at Montrose. No. 2 Squadron has been training a flight with this object in view.

Aircraft Park (Farnborough).—Repair work on Aircraft and Mechanical Transport and technical training of recruits was carried out daily.

Headquarter Flight (Farnborough).—Experiments of various kinds were continued, in connection with which a considerable amount of flying took place.

Recruits' Depot (Farnborough).—There are now over 100 recruits "on the Square," divided up into 5 Squads.

The initial training of recruits is of a wide scope, and includes, in addition to courses of instruction in technical duties connected with the maintenance of aircraft and mechanical transport, drill, physical training, musketry, athletics, boxing, lectures and practical instruction in first aid, sanitation, field cooking and map reading, lectures on military discipline, and the organisation of the Army, particularly of the Royal Flying Corps (M.W.).

War Office, July 22nd, 1914.

Royal Flying Corps (Military Wing).—Programme of work for week ended July 25th, 1914:—

No. 2 Squadron, Montrose.—This squadron reached Montrose from Netheravon early in the week, complete in personnel, machines and transport. One machine was badly damaged en route, but the pilot was unhurt. The work during the week has been confined chiefly to overhauling machines and transport, after the journey, and, as regards one flight, in preparation for manœuvres in Ireland.

Nos. 3 and 4 Squadrons, Netheravon.—The course of instruction for 10 Regular officers was continued. These officers were practised in reconnaissance work, being taken up for cross-country flights over the country in the neighbourhood of Salisbury Plain. Work in connection with the observation of artillery fire was also carried out. Major Raleigh, commanding No. 4 Squadron, made a short cross-country flight by night, carrying a passenger, and landing at Netheravon by means of flares.

No. 5 Squadron, Fort Grange, Gosport.—The pilots of this squadron carried out several cross-country reconnaissances. Work on the erection of portable sheds was continued.

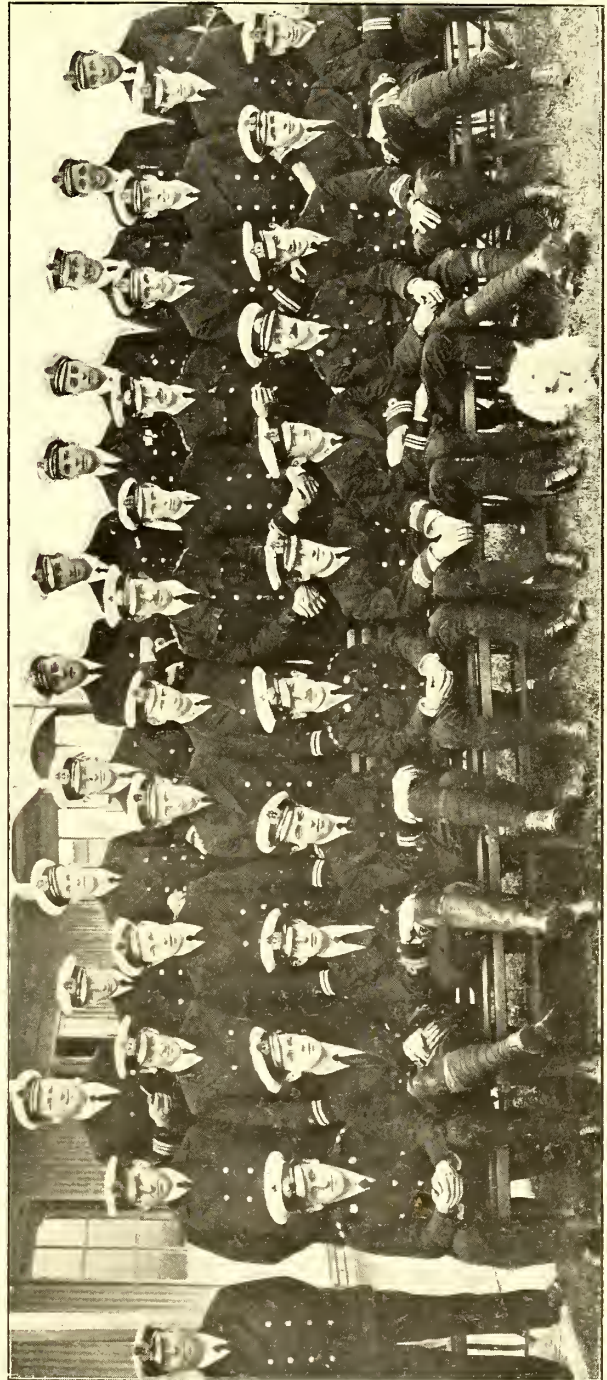
No. 6 Squadron, Farnborough.—Reconnaissances were made daily in connection with the training of the 1st and 2nd Division.

Nos. 1 and 7 Squadrons, Farnborough.—These two new squadrons are gradually being built up.

Aircraft Park, Farnborough.—Repair work to aircraft and mechanical transport and the technical instruction of recruits was carried out daily.

Headquarter Flight, Farnborough.—Experiments of various kinds were continued. The Kite Section returned from Salisbury Plain, where they have been working in conjunction with the artillery.

General.—The Military Wing suffered a severe loss on the



AT CALSHOT NAVAL AIR STATION.

- FIRST ROW.
 Staff-Surg. O'Connell; Flight-Lieut. F. G. Brodrick; Payr. MacKean; Flt.-Lieut. E. R. C. Nanson; Flt.-Lt. Lord Edward Grosvenor; Flt.-Lt. G. V. Fowler; Flt.-Lt. W. G. Sitwell; Flt.-Lt. R. H. Kershaw; Flt.-Lt. Hyde-Thomson; Flt.-Lt. R. P. Ross; Flt.-Lt. Busk.
- SECOND ROW.
 Mr. Handcock, W.O.; Mr. Scarff, W.O.; Flt.-Lt. Williamson; Ft.-Lt. Cave-Brown-Cave; Flt.-Lt. Cull; Flt.-Lt. Bowhill; Flt.-Lt. Baraby (Capt. R.M.L.I.); Flt.-Lt. Chambers; Flt.-Lt. H. Fawcett (Capt. R.M.L.I.); Flt.-Comdr. A. N. Bigsforth; Squadron Comdr. J. W. Seddon; Flt.-Lt. R. Bone.
- THIRD ROW.
 Flt.-Comdr. C. E. Rathborne (Lt. R.M.L.I.); Flt.-Comdr. J. T. Babington; Flt.-Comdr. D. Oliver; Flt.-Comdr. F. E. Hewlett; Squad.-Comdr. Risk (Capt. R.M.L.I.); Wing-Comdr. F. R. Scarlett (Capt. R.N.); Squad.-Comdr. A. M. Longmore; Squad.-Comdr. R. Gordon (Major R.M.L.I.); Squad.-Comdr. R. G. H. Clark-Hall; Flt.-Comdr. J. L. Travers; Staff-Surg. O'Hea.

21st instant by the death, as the result of an aeroplane accident at Fort Grange, of Lieutenant L. C. Hordern, Lancashire Fusiliers, and of No. 5 Squadron. This officer had been in the Corps since November, 1913, and had done a considerable amount of flying on Henry Farman machines. The funeral took place on Friday at the Garrison Church, Fort Rowner, and Haslar Cemetery. Sergeant Campbell, his passenger at the time of the accident, is progressing favourably.

War Office, July 27th, 1914.

* * *

The evidence given at the inquest on the late Lieut. Hordern, No. 5 Squadron, R.F.C., who was killed on a Henri Farman biplane at Fort Grange last week, shows that the machine was not stalled in the air, though from the first accounts of the accident this appeared a possible explanation of the mishap. It seems that the machine came down in a continuous spiral from the time the engine was stopped, and the opinion of witnesses seems to be that the rudder control jammed, two witnesses expressing their opinion that this was probably caused by either the pilot or the passenger getting a foot caught between the rudder-bar and the floor. The machine was fitted with dual control, and therefore there was the possibility of either of the crew being caught in this way.

One ventures to suggest the advisability of the passenger's controls in all dual control machines being fitted with springs, so that it is possible for the pilot in charge to overcome such an impediment if it should occur to the passenger. This accident recalls one of a somewhat similar nature which occurred to one of the Naval pilots at Eastchurch some time ago. The pilot in question was flying a Short "pusher" biplane by himself, and the cushion in the passenger's seat had not been properly strapped in place, with the result that as the pilot was doing a steeply banked turn, it fell off the seat, and jammed the aileron wires, so that the machine refused to come off the bank, and continued spiralling violently. Fortunately the pilot managed to get the control to work to some extent, and by vigorous use of the rudder and elevator succeeded in landing without serious damage, but if the wire had jammed a little more tightly the result would have been an accident as impossible of definite explanation as that which cost the life of Mr. Hordern.

One gathers also that the accident to Mr. Gill on the Sopwith machine at Fort Grange was not caused by the machine being stalled by the pilot. Such information as is available from unofficial sources says that the engine stopped as the machine was rising, and that it was impossible to make a proper landing under the circumstances in which the machine was placed at the moment.

* * *

The Hon. E. G. Strutt, sole arbitrator in the case of Lord Rendlesham and the War Office, has issued his award. The claim was for compensation for the compulsory sale to the Crown of 1,249 acres at Orfordness for a flying-ground. The leading experts for the respective parties were, for the owner, Mr. H. Trustram Eve (J. R. Eve and Sons, Bedford and Westminster) and Mr. W. Anker Simmons (Simmons and Sons, Henley-on-Thames). Brigadier-General Sir D. Henderson (Director-General of Military Aeronautics) also gave evidence.

The valuations ranged from about £33,000, on behalf of the owner, to £6,700 for the Crown. The arbitrator awards Lord Rendlesham £12,107, and in addition approximately £1,100 to tenants.

* * *

No. 2 Squadron have all returned to Montrose and settled to work again, but very little flying has been done during the past week. The first three days were bright, but only the old Maurice Farman was out occasionally.

On Wednesday, Capt. Dawes flew it over the aerodrome and beach, Capt. Waldron flew south on B.E. 327 and alighted at Berwick, whence Major Burke on B.E. 228 was continuing his journey to Montrose. Capt. Waldron arrived back at Montrose at 4.30, but it was four hours later when Major Burke got in, having had trouble with his engine.

On Thursday evening a few machines were engaged in test

flights, but after that a gale raging for two days prevented any more flying being done.

A Flight of Squadron 2 is to be transferred during the coming week to Major Longcroft's No. 1 Squadron in formation at Farnborough. It comprises many of the early members of the R.F.C. who have helped its growth, and No. 2 will have to look to its laurels in the future if it is to maintain its premier position.

First A.M. Parker, of Squadron 2, has taken his brevet and is to be congratulated on a good performance.

* * *

The machines of No. 6 Squadron are at present undergoing an overhaul preparatory to their going on manœuvres.

* * *

On Saturday last Lieuts. Waterfall and Lawrence, the former as pilot, left Farnborough for Shoreham on a Martin-Handasyde monoplane (120-h.p. Austro-Daimler), and covered the distance of between 40 and 50 miles in 25 mins. On landing, some slight damage was done by running into a fence. The officers mentioned have special leave to test this machine.

INDIA.

When flying was begun in India one of the important questions to be decided was the effect of hot weather on aeroplanes and their engines. The "Allahabad Pioneer" understands that the trials at Sitapur prove that the effect is very slight and of no consequence.

FRANCE.

On July 23rd, 1914, the following transfers were made:—Lieut. de Lafargue (of the cavalry) from 2nd aviation group at Saint-Cyr to the 1st group at Dijon. Lieut. Hantz (aviator) from 144th regt. of infantry to 105th regt. for regimental work. Lieut. Clement, of the General Staff, detached from the aeronautical service and returned to 18th Chasseurs.

General Bernard, Director of Military Aeronautics, has decided to organise a competition among military officers. This competition will commence on August 1st, and will remain open until December 31st, and will consist of speed and endurance contests round a circuit of Reims, Mailly, Dijon, Belfort, Epinal, Nancy, Verdun, Mézières, Maubeuge, Sissonne, Versailles, Reims, with compulsory stoppages at each of these places. Aviators will be permitted to start at any point in the circuit. The speed contests will be governed by handicap. The ultimate winner will receive a gold medal, the second a silver medal, and those obtaining places of honour will receive medals of bronze. Thus one sees that even France is before "England, the home of sport," in following Germany's good example of developing a spirit of emulation among military aviators and putting it to practical use as a means of enthusing the taxpayer.

Acting under the instructions of "la Sûreté Générale," the Dijon police have arrested an individual at Lonvic, not far from the military aerodrome, on suspicion of espionage, in connection with military aviation.

On Saturday last the mayor of Lamotte-Breuil placed in position the first girder of what will be the largest airship shed in the world. This is being built by M. Clément-Bayard at Breuil. The shed, which is to be 607 feet long, and 328 feet wide, will have an entrance 164 feet high. It will store two dirigibles one above the other, in the central nave, and one on either side in the returns, each of which ships may be of 1,060,000 cubic feet capacity. The shed will be completed by the middle of December. The first Clément-Bayard of this size, which is now ready, will be tested in the meantime at Maubeuge.

Naval Lieut. de l'Escaille has been appointed to command the Villefranche station, the appointment to date from August 1st.

GERMANY.

On July 21st a military airship from Thionville bounded against the ground at Heusweiler, near Sarrebrück, and was badly damaged. Two officers who jumped to earth from about 20 ft. were injured, one breaking an arm and a leg, and the other being severely bruised.

Z. 25's first trip around Constance was hardly noticed by

"For the Highway and the Skyway."

**WAKEFIELD
CASTROL^{Regd.}
MOTOR OIL**

The Winner of the
GREAT AERIAL
DERBY,
LONDON-MAN-
CHESTER-LONDON
and
LONDON-PARIS-
LONDON
Speed Contests pays
tribute to

**WAKEFIELD
CASTROL
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By

COMMANDANT DUCHÊNE

of the French Génie

TRANSLATED FROM THE FRENCH BY
JOHN H. LEDEBOER, B.A.

Editor of Aeronautics

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many, owing to the remarkable stillness with which the propellers work, in striking contrast to the ordinary types, which herald their approach long beforehand by the whirring and thudding of the machinery.—B.

RUSSIA.

By order of the Minister of War, flights over the military districts of St. Petersburg, Vilna, Warsaw, Kieff, and Odessa are forbidden unless permission has been previously obtained.

ITALY.

The "Verona" escadrille just back from Tripoli and under the command of Lieut. Tappi is now installed in the new station at Verona, where the pilots are not apparently intending to rest much. This station has one fine shed so far, but it is large enough to house the whole five Farmans on which the escadrille is mounted.

Aviano continues to turn out military pilots, largely N.C.O.'s, at an average of 20 a month.

M. III did another two-hours' flight last week over Rome and is evidently quite all that was expected.

Emilio Pensuti, the tester at Malpensa, during the last week in June and under the eyes of a military commission, of which the celebrated biplane pilot, Lieut. Bailo, was a member, conducted trials of a new automatically stable "parasol" invented by Col. Douhet and constructed by Signor Caproni.

Two flights of an hour each were made without any use being made of the warp or elevator, barring the employment of the latter for getting off. The control levers had been previously coupled up to a recording dial to enable the commission to check the pilot's moves.

The warp and elevator of this machine are connected up to a movable kingpost which acts as the cabane and is weighted so as to become a pendulum. A 45 Anzani was used, and it appears that with its power alone the machine climbed and performed generally as if even the elevator might also be dispensed with in future types. It is claimed that the Douhet stabilising device ensures constant aerodynamic equilibrium, rather than that it keeps the machine always on a level keel, also that when the controls are used the aeroplane responds quickly.—T. S. HARVEY.

A Bill now before the Italian Parliament provides for the nomination of two Commandants-in-Chief for aeronautics; the creation of a balloon battalion; the establishment of an aircraft factory; a number of escadrilles of warplanes; a military school of aviation; a technical department, a central aeronautical department, and a civilian technical staff, including engineers, professors, mechanics and pilots—note the precedence! These will supplant the battalion of engineering specialists and the battalion of aviators created on June 27th, 1912, and the experimental construction department of the same date. The Bill, when passed, will take its effect from July 1st, 1914. The War Budget will be augmented by £19,000 to provide for this extension.

DENMARK.

The Naval and Army officer-pilots have been busy lately. Lieut. Hoeck on a Leveque flying-boat had an accident when on a flight near Helsingör. On alighting on the water the boat was damaged, but running at full speed he reached the beach without sinking.

Two further Army officers, Lieutenants van der Masse and Kofoed-Jensen, have taken their certificates on Maurice Farman biplanes.—H.

GREECE.

It is reported from Turkey that Vice-Admiral Mark Kerr, R.N., chief of the British Naval Mission to Greece, hopes to obtain for that country the following additions to its fleet:—3 or 4 Dreadnoughts of the "Salamis" type, 2 or 3 cruisers of the "Avaroff" type, 2 5,000-ton torpedo cruisers, 23 destroyers, 30 torpedo boats, 6 submarines, several gunboats, and about 20 seaplanes.

It will be remembered that 3 or 4 school propeller-driven seaplanes have already been delivered to Greece, and the latest purchase by that country is a 200-h.p. Sopwith Bat-boat, one of the fastest and most powerful seaplanes yet produced.

SWITZERLAND.

At the moment there are five machines in the military balloon shed at Berne—a Blériot, a Morane, an Aviatik biplane, an Aviatik monoplane, and an Otto biplane.

The six Schneider biplanes for the Army will take part in the Autumn manœuvres.

U.S.A.

The War Department has issued preliminary conditions governing competitive tests of army biplanes to be conducted next October at San Diego, Cal. According to "Aero and Hydro," Chicago, "The type desired, namely, a military reconnaissance aeroplane, must possess the following characteristics: Biplane, enclosed fuselage, two-seater, dual control, and have a maximum speed of not less than seventy and a minimum speed of not more than forty miles per hour when carrying fuel and oil for four hours' flight at seventy miles per hour and a useful load of 450 pounds, and under these conditions of load to climb 4,000 feet in ten minutes," and the gliding angle shall not be less than 1 in 6. When dissembled and packed no part of the machine is to exceed 20 feet in length, and the machine must be capable of assembly in not more than two hours and of disassembly and packing in not more than one and a half hours by four mechanics.

The following particulars must be supplied relating to machines submitted:—

- (a) Weight, fully loaded when fully equipped.
- (b) Normal angle of incidence in horizontal flight.
- (c) Gliding angles.
- (d) Safe ranges of angle of incidence.
- (e) Fuel, oil and water consumption, with certificate of performance (subsequently described).
- (f) Blueprint or diagram to scale of aeroplane and motor complete.
- (g) Stress diagram of planes showing tensile and bending stress on beams, struts and brace wires, clearly indicating the material used and the factor of safety in each member, together with moment diagrams.
- (h) Itemised weight of parts.

The certificate of performance shall consist in a certified test of the motor as follows:—

- (1) One-hour run at the rated b.h.p. on the test stand.
- (2) Half-hour run at the maximum power on the stand.
- (3) A run of half an hour at 20 per cent. of the rated revolutions per minute.

During the test the following data shall be reported:—

- Revolutions per minute at the rated b.h.p.
- Revolutions per minute at maximum b.h.p.
- Minimum revolutions per minute.
- The oil per b.h.p. and the fuel per b.h.p.

A statement of the condition of the motor at the end of a half-hour run.

CHILE.

The President of the Chilean Republic, in his message on the occasion of the opening of Parliament, devoted a paragraph to military aviation. He felicitated the aviation school on the results of the first year of its being, and recommended the creation of a company of aviators, staffed by pupils from the school.

Foreign Notes.

France.

On July 20th M. Pégoud, hard up for a novelty, conceived the idea of breakfasting in the air. Accompanied by a reporter of "L'Aero," he ascended at Buc on a tandem Blériot, his passenger carrying a large basket of provisions. M. Pégoud left Buc and flew over Paris and Versailles. After reaching 2,500 ft. the "sympathique aviateur" turned round and exclaimed to his passenger, "To table!" and abandoning the controls and seating himself up on the longerons of the machine facing the tail, consumed the delicacies handed to him by his passenger. The feasters finished up with a bottle of '93 Vouvray, and then returned to earth very pleased with themselves.

On July 22nd M. Laporte started from Villacoublay on a Voisin biplane (130-h.p. Salmson) with Vienna as his objective, but he was compelled to land at Osterhofen, 50 kms. from



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the Austrian frontier. He broke his propeller in alighting, making it impossible to continue that day. He intends to travel to Bucharest and Constantinople.

The following are the chief provisions of the projected French decree relating to the regulation of aerial navigation:—

Aircraft are free to travel through the air over the whole of France, subject to the following restrictions and to any restrictions which may be included in future edicts:—

The term "aircraft" includes all classes of balloons, dirigibles, aeroplanes, or other appliances capable of voyaging through the air.

Aircraft reserved for any services of the State are considered as public aircraft, as are any aircraft operating under the orders of a military officer. All other aircraft are considered as private vessels.

Except in case of necessity, aircraft are forbidden to land in any enclosed space attached to a habitation, or in any other place than authorised landing-grounds, without the consent of the owner.

Any damage caused by an aircraft or by its crew, either to crops, grounds, or other property, or to persons, may be recovered from the crew or owner of the aircraft on proof that the damage was caused by that aircraft or its crew. If it can be shown that the damage was caused by any fault of the victim, the owner of the aircraft may be discharged of part or all of the damages.

PRIVATE AIRCRAFT.—No aircraft is to be put into service without a certificate which is to be granted after inspection has shown that the aircraft is airworthy, nor until it has been marked with such identification numbers and letters as may be assigned to it. This certificate ceases to be valid in case of any alteration in the aircraft. All aircraft may be subject to periodical re-examination. No aircraft will be permitted to take the air unless in charge of pilot of certified capacity, which certificate is only to be granted to persons of approved morals and not less than 18 years of age. This regulation is not enforced in recognised aerodromes except during public exhibitions.

Unless under special permission, aircraft may not pass over any legally prohibited area. Any aircraft finding itself over such an area by accident is required to land immediately on demand. If the aircraft fails to land, force may be employed to constrain it to do so.

Private aircraft are forbidden to carry explosives, weapons of war, carrier pigeons, photographic appliances, wireless telegraph equipment, or mails, without special permission.

All aircraft are required to carry a way bill giving particulars of all journeys which they may make, such way bill to be preserved till the earliest entry thereon is at least two years' old, and it is to be shown when required to any authorised official. Such authorised officials have the right to inspect any aircraft at any time.

PUBLIC AIRCRAFT.—Aircraft in the employ of the State will be marked with distinctive signs according to their particular service.

Aircraft in the service of any foreign Power are forbidden to fly over French territory.

AIRCRAFT FROM ABROAD.—Special regulations will be issued as to authorisation of foreign private aircraft wishing to fly over France.

GENERAL.—Local authorities should render any assistance in their power to aircraft in difficulties. Any person discovering the wreck of an aircraft is to give information to the municipal authorities.

Flying meetings and exhibitions are only permitted under sanction of the prefect of the district in which they are held.

Aircraft may not carry foreign merchandise, nor goods of French manufacture except with certificates of their origin.

Pains and penalties of varying degrees are enforceable in case of any infringement of these regulations

Germany.

It is rumoured that a firm of aeroplane constructors at Mulhouse have a machine in hand on which a military aviator intends to attempt the Atlantic flight about August 20th.

Herr Trautwein has excelled all other aerial clowns. He has now attached a trapeze bar to his monoplane on which

the gymnast Ivanoff performs "en plein vol." The first "circus" was held at Beesen.

The police departments of Basse and Haute Alsace have forbidden aviators to fly over Alsace along the Rhine and the Valley of Munster. This has especial reference to foreign pilots.

Last week Herr Basser flew from Berlin via Budapest, Sofia, Bucharest to Constantinople on a Rumpler biplane in four days, his flying time being 18 hours 12 mins. Dr. Hermann Elias was passenger.

Oelerich, whose marvellous record of 7,700 metres has brought him into great prominence, is 37 years old, and his brevet is No. 37 in the German list. His certificate was gained on a Schulz-Herfort monoplane on October 21st, 1910. In the following year he made a demonstration tour in Brazil, and on his return he entered the services of the Deutsche Flugzeug Werke at Leipsic, whose head pilot he is.

Reinhold Boehm, the new 24-hour aviator, is 24 years old and gained his brevet on April 18th, 1913, on a L. V. G. biplane, soon afterwards entering the employ of the Albatros Works. The machine he used was the one with which Thelen went through the Prince Henry Circuit and Landmann used on June 27th and 28th when putting up a new world's duration record of 21 hrs. 20 mins. It speaks volumes for the entire machine and the 75-h.p. Mercédès motor to have undergone such severe strains and be still in the best of condition.

Privy Councillor Albert, of the German Home Office, flew from Berlin to Malmo last week to inspect the Malmo Exhibition. The flight was made in a Rumpler monoplane piloted by Wieting. Herr Albert was accompanied by another Government official, Herr Trautmann, in a D.F.W. biplane steered by Schueler. Both machines left Berlin on July 18th at 8.10 a.m. and arrived at Warnemuende two hours later, where a lengthy stay was made. Schueler damaged his biplane enough in landing to prevent his continuing, but the Rumpler, with Herr Albert, set out from Warnemuende at 4 p.m. and landed at Malmo at 6 p.m.

The Gelsenkirchen Week witnessed a great deal of good flying without any sensational features. Two military reconnaissances went off well, the pilots in each case being civilians, the observers officers. A visit was paid to Duisburg, where Ballo (100-h.p. Jeannin mono) landed first; he also won the Duisburg Cup for the best altitude attained at Duisburg with 2,600 metres. From the Gelsenkirchen ground Stiploschek (120-h.p. Jeannin) rose to 5,000 metres.—B.

Twenty-six machines, mostly biplanes, have been entered finally for the Warnemuende waterplane meeting, which will start on July 31st. Nearly all are of the twin-float type, only a few being flying-boats. At present, during the Bodensee meeting, machines with floats and wheels for water and land have been abandoned altogether; the Navy has no more interest for that type. The A.E.G. (Allgemeine Elektrizitäts-Gesellschaft) Works entered one of their folding-wing type biplanes. The float arrangement is similar to the Nieuport. Span of machine, 16 m.; engine, 150-h.p. Benz; wings can be folded back in 1½ mins.

The Ago Works are present with three of their newest type hydros. Pilots are Max Schüler, Wilhelm Kiesling, and Anselm Marchal. Two of these mostly steel-built machines are driven by 150-h.p. Argus engines; Kiesling's machine is fitted with a 200-h.p. Oberursel-Gnome engine (German Gnome). Dimensions of machines are: Overall span, 16.5 m.; length, 9 m.; two sprung floats, with one step, 8 c.m. deep, are fitted. The Ago machines are in appearance copies of the Henri Farman, which is to be pardoned, as one of the chief designers of the Henri Farman Works, the Swiss engineer Haefeli, is now chief designer at the Ago Works. Another fact is that the German Navy has lately given out new regulations to the constructors, in which the "pusher type" machine is preferred.

Rumpler competes with a twin-float biplane and a flying-boat (biplane); the first machine is driven by a 6-cylinder Mercédès and is similar to that machine which Basser used for his record flight of 18 hrs. 12 mins. The Rumpler flying-boat looks in some way like the Curtiss. The hull, which is built at the Rumpler Works, is 8.15 m. long, of the single-step type, and weighs 140 kgs. A 150-h.p. Benz engine is fitted between the

planes. The upper plane has a span of 15 m. and the lower 10 m.

The Flugzeugbau Friedrichshafen, a branch of the Zeppelin Works, have entered three different machines, a flying-boat biplane, type F.F. 21, a tractor type biplane (twin float), type F.F. 17, and a biplane of the "pusher" (twin float) type, F.F. 27. The hull of the flying-boat is 6.2 m. long and 2.6 m. wide. A 150-h.p. Benz is fitted in the bottom of the boat and drives through bevel-gearing a four-bladed propeller. F.F. 17 is similar to the machine competing in the Bodensee meeting this year. It is fitted with a 135-h.p. N.A.G. engine. Planes are arrow-shaped, as are the Rumpler and A.E.G. The F.F. 27 is fitted with a 150-h.p. Benz.

The Gotha Waggonfabrik A.G. entered two machines (twin floats), tractor biplanes, one fitted with a 150-h.p. Rapp engine, the other a 150-h.p. Benz. W.D. 2 is identical with W.D. 1, in which Eng. Dahm made the well-known flight over the Baltic.

The Albatros biplane entered is similar to that Hirth used in the Monaco meeting.

A flying-boat (biplane) is entered by Melli Beese (single row of struts between planes), 95-h.p. Mercédès engine in boat, propeller bevel-gearred behind planes.

The Aviatik biplane is of the central-float type with 190-h.p. Argus motor.—F.

The central office of "The Northern Seaflight" has, at the first announcement issued, received 18 entries from Germany, France, Austria, Italy and Sweden, so that the Northern Seaflight is sure to be the biggest and longest international seaplane race yet held. The six entries from France are the following ones: (1) Maurice Farman hydro-biplane (pilot, Renaux); (2) Henri Farman (Chevillard); (3) H. Farman (Bill); (4) H. Farman (Fischer); (5) Voisin hydro-biplane, announced by Société des Moteurs Salmson, Billancourt (pilot, Laporte), and another. The entry from Sweden:—Morane-Saulnier hydro-monoplane (pilot, Dr. Thulin). The nine entries from Germany are:—(1) Aviatik hydro-biplane (pilot, E. Stoeffler); (2) Beese-Dove hydro-monoplane (C. Boutard); (3) Brandenburgische Flugzeugwerke hydro-biplane (Reiterer); (4) ditto (Völmöller); (5) Albatros hydro-biplane (Thelen); (6) ditto (Boehm); (7) Ago hydro-biplane (Schüler); (8) Gotha hydro-biplane (Dahm); (9) Fokker flying-boat biplane (de Waal). One entry from Austria:—(1) Lohner hydro-biplane (pilot unknown). The two entries from Italy are:—(1) Gabardini hydro-monoplane (pilot, Landini); (2) ditto (Desbryères).—H.

Austria.

The Austrian Antarctic expedition under command of Dr. Koenig believes in aeroplanes and is taking out an Etrich military monoplane which the Austrian War Office has placed at its disposal. A well-known pilot will accompany the expedition.—B.

Belgium.

A meeting at Stoeckel opened on July 19th. M. Olieslagers gave a demonstration of looping and "fool flying," in which he was joined by M. Chemet. During the afternoon an accident took place on the occasion of the landing of M. Lumière, who had arrived from Berchem. M. Lumière charged a wooden fence and his machine capsized. The aviator was pulled out with contusions without gravity, but his machine was strongly damaged.

On July 21st Mme. Cayat de Castella was killed at Stoeckel, in Belgium, while performing on the last day of the aviation meeting there. She ascended, as usual, strapped under the nacelle of M. Champel's biplane, and was released at an altitude of 2,000 ft., but the parachute failed to open and she fell to the ground and was smashed to pieces. At the close of the meeting the organisers disappeared without paying out the prize-money, and a writ has been issued against them. M. Olieslagers is the principal claimant.

Bulgaria.

Basser gave demonstrations on his Rumpler biplane at Sofia, carrying Bulgarian officers, before leaving for Bucharest with a Bulgarian passenger. On July 22nd Basser effected a safe landing at Constantinople, flying there in three hours from Bucharest.—B.

Denmark.

On Thursday, July 23rd, the German aviator, Wieland, on an Albatros biplane (Mercédès motor), with the Danish aviator, Pollner, as a passenger, flew from Berlin to Copenhagen in 3 hrs. 6 mins., while the express train takes 10 hrs. Their trip is for enjoying their holidays, and before returning they will visit Malmo and other cities.

For 27 following days Lieut. Hoeck, on a F.B.A. flying-boat, has made daily flying excursions.

When landing in his flight for the superior military certificate, Lieut. Kofod-Jensen, on a Henri Farman biplane, hit a flagstaff. The aeroplane was smashed up and the officer thrown out, luckily without injuring himself.—H.

U. S. A.

The trouble with the Curtiss trans-Atlantic flying boat continues, and many experiments with hydroplane bottoms and tail-fins have been tried without result, the full load refusing to be lifted off the water. As a last resource a third 100-h.p. motor was tried, driving a tractor screw, and although it was found possible to lift the full weight with this addition, the increase in petrol consumption would make it impossible to reach the Azores, so it is reported that Lieut. Porte has decided to postpone his attempt until after the equinoctial gales, which will put the attempt back to October.

A ribald wit calls the machine "The Atlanticon," and proposes to produce an alleged song, entitled "I Wanamaker do it—but she won't." Meantime, all serious-minded people will sympathise heartily with Mr. Curtiss and Lieut. Porte in the troubles they are undergoing, and will applaud their plucky efforts to achieve success.

Mr. Arnold Kruckman is in London seeing about the proposed "Round-the-World-Panama-Exposition—There and Back—Perhaps" Flight. No one really in touch with aviation or aviators takes the proposition seriously. If Mr. Kruckman tries again in 10 years there may be something doing.—C.

A New Exhibitionist.

One gathers that Mr. F. Warren Merriam, who has recently left the Bristol Company, is about to undertake an exhibition tour in the employment of Sir C. Royce. He will fly a 100-h.p. Caudron biplane.

An Injunction.

In the High Court of Justice, Chancery Division, last week, before Mr. Justice Astbury, the Grahame-White Aviation Co., Ltd., applied for and obtained an interim injunction against Mr. F. W. Goodden to restrain him from entering for or taking part in any competition or exhibition of flying except for and on behalf of the plaintiff company.

The plaintiff company engaged the defendant in May, 1914, for six months.

On June 2nd the defendant intimated that he would not fly for the plaintiffs any more and had since given exhibitions on his own account at various places. The defendant alleged that the aeroplanes supplied by the plaintiffs for his use were unsafe.

The plaintiffs contended that no complaint as to the machines was made at the time, and that the machines of which defendant complained had since won, without any alterations, several prizes, including the Aerial Derby, the London-Manchester and back, and the London-Paris and back races.

Felicitations.

A marriage has been arranged, and will take place early in September, between Betty Ewart, only daughter of Dr. and Mrs. Charles Ewart, of 58, Queen's Gate Terrace, and Charles Hubert, son of Docteur and Madame Hubert, of Cherbourg, France. M. Hubert will be remembered as the victim of a serious accident when flying in the "Aerial Mail" performance at Hendon some years ago.

Photographs.

Copies of the photograph of the Officers of the Royal Naval Air Service, which appears in this issue, but in full 12 inches by 10 inches size, may be had from Mr. F. N. Birkett, 97, Percy Road, Shepherd's Bush, W. Price, 2s. 2d. each.

The Week's Work.

Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Brooklands ...	Fair	Good	Good	Windy	Rain	Windy	Windy
Caishot ...	Fine	Fine	Show'y	Fine	Windy	Fine	Fine
Eastbourne ...	Windy	Fine	Fine	Windy	Dull	Windy	Windy
Eastchurch ...	Fine	Fine	Windy	Windy	Fair	Show'y	Gale
Hendon ...	Windy	Windy	Fair	Windy	Windy	Windy	---
Montrose ...	Fine	Fine	Fine	Fair	Gale	Gale	---
Shoreham ...	Fair	Fair	---	---	---	---	---

Flying at Hendon.

On Thursday Mr. Brock was out on the Morane and carried Mr. Barrs as passenger. Mr. Noel took passengers on the Maurice Farman, and Mr. Carr looped the loop on the tractor biplane. Mr. Lillywhite flew a box-kite.

Earlier in the day M. Renaux left the aerodrome and flew over the Channel to Beaumaraais on his 120 h.p. Maurice Farman biplane, later continuing to Hardelot and Paris.

If the wind on July 25th, 1909, had been as strong as it was on July 25th, 1914, M. Blériot would not have flown the Channel—from the French side at any rate—for jealous Boreas sent the worst gale of the season from the North-West to mar the Blériot celebrations. However, as usual the management made the best of things and flying of the highest order took place. The first pilot out was Mr. Birchenough on the G.-W. Maurice Farman. Mr. Birchenough, who has been laid up for some weeks, made a long and high flight. He reported that though the ground gusts were very bad, it was better higher up, but thought that perhaps the shaking he received was due to his being out of practice. Then M. Noel made several flights on the same machine and was just as badly bumped about. His efforts to keep up the interest are worthy of the highest commendation. The only other flight of the afternoon was made by Mr. Carr, who went up on the 50-h.p. tractor biplane with the intention of looping, if he could get high enough. He had a terrible time of it, the little machine fluttering about in all directions, the wind frequently dropping him fifty feet at a time. Finally he got to the windward of the aerodrome, where things seemed worse than ever, and disappeared behind the fence. Considerable anxiety was felt for his safety, for when the machine went out of sight she was descending vertically, but after a few minutes' search both Mr. Carr and "Lizzie" were found intact in a very small field close to the trees. A demonstration of hay-making was also given, the presence of two reaping machines and a wain adding to the rural charms of the landscape.

On Sunday morning, when the weather was but little calmer than on the preceding day, Mr. Prosser flew from Bedford to Hendon on his Caudron. He stopped at St. Albans for petrol, and the whole journey occupied an hour. During the afternoon Messrs. Birchenough and Noel flew the M. Farman, Messrs. Carr and Brock flew the Morane, Messrs. Lillywhite and Dunn flew the G.-W. biplane, and Mr. Carr looped.

The Bank Holiday programme will have features of special interest. On Saturday next there will be a speed handicap for the Sassoon Cup; the usual exhibitions and passenger-carrying will take place on Sunday, and on Bank Holiday a bomb-dropping competition, a speed contest, and a cross-country race (for the Desborough Challenge Bowl) will take place.

Flying at Brooklands.

On Monday, Mr. Mahl was testing the "Circuit of Britain" Sopwith, and Mr. Raynham an 80 h.p. Avro. In the afternoon Messrs. Raynham and Mahl to Farnborough on the 80 h.p. Avro and "Circuit of Britain" Sopwith respectively. Later Mr. Mahl returned from Farnborough, and the machine was then tested by an officer of the Royal Flying Corps. Mr. Mahl then did some passenger work. Mr. Barnwell went to Farnborough with a passenger on the Vickers gun-carrier. Lieut. Collet flew the D.F.W., and then took up Herr Hess, the D.F.W. works manager from Leipzig. Mr. Dukinfield Jones then took up the same passenger.

On Tuesday, Mr. Jack Alcock went to Wolverhampton with a passenger on the Sunbeam Farman, taking 1 hr 46 min to get there. Mr. Barnwell went to Woking and back on the

Vickers double surface box-kite. Mr. Creagh was out taxiing on his Bristol tractor. Mr. Raynham was also out on the Avro. In the afternoon Mr. Raynham went to Farnborough. Mr. Gower was out on the 50 h.p. Blériot. Mr. Hawker was out on his looping machine, and after a loop the machine started a spin, but soon came out of it. Mr. Barnwell returned from Farnborough on the Vickers gun-carrier, with Mr. Waterfall as passenger, and then took up several passengers. During the afternoon Mr. Dukinfield Jones was out several times. Lieut. T. R. Wells, 33rd Punjabis, and Lieut. Gilman, both Vickers pupils, took their brevets.

On Wednesday, Messrs. Perry and Glew were doing straights on the Perry tractor. In the afternoon Mr. Dukinfield Jones was passenger-carrying on the D.F.W. Capt. Lumsden (Vickers) took his brevet.

On Thursday afternoon, Lieuts Lawrence and Waterfall flew over from Farnborough and back on a B.E. Mr. Gower was out on a 50 h.p. Blériot.

On Friday, Mr. Hawker flew to Farnborough on a Sopwith.

On Saturday, Mr. Waterfall flew to Farnborough on the Martinsyde, and thence to Shoreham, with Lieut. Lawrence.

On Sunday, Mr. Hawker looped on the small Sopwith.

Flying at Folkestone.

Miss Trehawke-Davies, on her Blériot monoplane, piloted by M. Louis Noel, started to fly from Paris to London on Tuesday of last week. They left Buc at 6.45 a.m. in rain and wind. The rain cleared, but there was a strong head wind, and they landed at Hardelot Plage at 9.45 a.m. At 11 a.m. they left for London. Crossing the Channel at 5,000 ft. a thick mist was met. At Folkestone M. Noel glided to a lower altitude, but the engine gave trouble, and the monoplane would not rise. After circling over the Leas M. Noel landed without damage on the beach at Sandgate, close to the sea. The aeroplane was left at a local garage for the engine to be repaired.

Flying in South Hants.

The second Wight seaplane for Germany was out for test early last week, and flew very well indeed, piloted by Mr. Gordon England. The tests were brought to an abrupt conclusion by the copper tip flying off the propeller—made by another firm—and damaging a tail boom. The machine itself stood the experience admirably. Mr. England has also taken out the H.L. biplane (Hamble River, Luke & Co., Ltd.), which did not take the air, owing to the tail sinking with its floats as soon as it was put into the water. The 150-h.p. N.A.G. engine recently passed very satisfactory tests.

Flying at Newcastle.

Mr. W. Rowland Ding on a Handley Page biplane (100-h.p. Anzani) flew from Harrogate to Gosforth Park on Tuesday, July 21st, encountering dense fog en route. On Wednesday afternoon Mr. Ding made a number of flights between 3 p.m. and 8.30 p.m., carrying several passengers. It is hoped that arrangements may be completed whereby Gosforth Park may become a permanent aerodrome and flying school.

Flying in Yorkshire.

On Wednesday and Thursday, July 22nd and 23rd, on the occasion of the Yorkshire Agricultural Show at Bradford, a considerable amount of flying was done on Blackburn 80-h.p. monoplanes. Mr. Sydney Pickles, flying the latest type machine, carried four passengers between Leeds and Bradford. The first passenger was the Lord Mayor of Leeds (Mr. E. A. Brotherton), who weighs 14 stone. This is the first time that a Lord Mayor has visited a neighbouring town by air, and he was delighted that he should have the honour, and also that it should be on a Blackburn monoplane built in his own city.

Mr. Harold Blackburn, also flying an 80-h.p. Blackburn monoplane, opened the first Air Line Service in Great Britain between cities, flying to a time-table. He did the journey between Leeds and Bradford every half hour from 10 a.m. to 5 p.m., and only missed the 11 o'clock and 11.30 a.m. flights, which speaks well for both the machine and the pilot. Mr. Blackburn's first passenger was the Lady Mayoress of Leeds, so that both the Lord and Lady Mayoress made the journey.

During the afternoon, Mr. V. Gaskell Blackburn (who, by

the way, is no relation to either Mr. Robert Blackburn, the constructor, or Mr. Harold Blackburn, the pilot), arrived from York on his 70-h.p. Flanders biplane. He encircled the Show Ground three times, and then alighted beautifully. Since the Flanders machine was overhauled and reconstructed, Mr. Gaskell Blackburn has been doing some very good flying.

Thursday was a very bad day for cross-country work, very windy and cloudy, but Mr. Pickles and Mr. Harold Blackburn both made the return journey. Mr. Pickles, in addition, made two more attempts to reach Bradford, but on both occasions he was obliged to return owing to rain.

On Sunday afternoon Mr. Pickles flew from Leeds Aerodrome to the Knavesmire at York, a distance of 23 miles in 18 minutes, attaining a speed of 105 m.p.h.

Flying at Worcester.

On Sunday, July 19th, Mr. F. W. Goodden flew from Arley near Bewdley to Perdiswell Park, Worcester, arriving at 3 p.m. Shortly after his arrival he gave an excellent exhibition of fantastic flights. On Thursday afternoon and evening Mr. Goodden gave similar exhibitions at Pitchcroft, in very bad weather, to the great enthusing of the inhabitants.

Flying at Luton.

On Saturday last, Mr. Manton was to fly at the Flower Show at Leagrave, near Luton. All the afternoon the wind ranged between 50 and 60 miles an hour, and as the aeroplane tent was in a most exposed place it was not prudent to take the machine out for fear of the tent blowing down. At 6 p.m. there was a lull, during which the Blériot was safely got out and Mr. Manton made two fine flights, being blown about in all directions and finding the ground gusts very tricky when landing. In a wind still in the region of 50 Mr. Manton then went up and made three clean loops. On his next flight he made three more loops and an S dive. This is easily the worst wind in which Mr. Manton has looped.

The day before the flights fresh warp cables had been sent down but were found unsuitable. The Hewlett and Blondeau firm, whose new works are near Luton, kindly made entirely new cables and generally gave valuable assistance.

On Wednesday of this week Mr. Manton flies at the Heavtree Flower Show, Exeter.

Flying at Scarborough and Darlington.

Last week Mr. Hucks tested his new 60-h.p. looping Blériot at Scarborough. On Wednesday evening he ascended from the Deepdale Golf Course and during a flight of half an hour made 30 loops, 15 of these being done consecutively. Most of these Mr. Hucks made over Filey.

Mr. Hucks' 80-h.p. two-seater had been packed up for Darlington, but there were so many applicants for passenger flights that it was again assembled and kept Mr. Hucks busy for several days.

On Saturday Mr. Hucks journeyed to Darlington and found such a terrific wind that the promoters, the South Durham and North Yorkshire Horse and Cattle Show, suggested that the flights should be postponed. In spite of this Mr. Hucks went up in the gale, but could not loop. He therefore arranged to give a free demonstration of looping on Monday.

On August Bank Holiday and the following day Mr. Hucks appears at Southampton and on Wednesday at Meyrick Park, Bournemouth.

Lying at Scarborough.

On Saturday, 18th, an imaginative imbecile of French nationality created something of a sensation at Scarborough by declaring he was M. Pierre Verrier's brother, and challenging Mr. Hucks to a combat of "vols de fantaisie." After putting the whole town into a state of ferment during the week-end, and making many contradictory statements about the h.p. of his machines and so forth, M. "Georges Verrier," as he calls himself, decamped to London. Last week he was arrested in London on the representations of the real Verrier.

Flying at Shoreham.

On Saturday last Mr. Eric Pashley flew in a 50-m.p.h. wind. The Martinsyde monoplane arrived from Farnborough.

During the Bank Holiday week-end there will be looping by Mr. Hall. On Monday there will be a cross-country race to Tunbridge Wells and back, followed by illuminated night

flying. On other days there will be racing, bomb-dropping, and other competitions, the competitors being Messrs. Hall, Dyott, Alcock, E. and C. Pashley, and Elliott.

Flying at Eastbourne.

On Tuesday Mr. Fowler, of the Eastbourne Aviation Co., gave a series of passenger and exhibition flights on the Henri Farman seaplane along the sea front.

Flying at Leamington.

On Friday, July 17th, Mr. A. Wingfield Smith, one of the pilots of the Royal Aircraft Factory, came down at Harbury, five miles from Leamington, owing to a broken tappet rod in the Renault engine on a B.E. biplane, which was fitted with the new oleo-pneumatic landing chassis. Spares for the engine arrived on Saturday, but when the machine was tested it was found that the propeller had been damaged. A new one was fitted on Sunday afternoon, and in the course of the various test flights Mr. Smith gave an excellent exhibition to the aborigines of steep banking and gliding, the performance including a difficult landing over tall trees. After leaving Leamington on Sunday afternoon, the machine was brought down after a short flight near Banbury with broken gudgeon pins. Apparently some damage was then done to the machine, and it was dismantled and returned to Farnborough by road.

It will be seen from the illustration that the rudder post has been strengthened by the addition of steel tubes, and that the chassis is of a comparatively novel type. The chassis strikes one as being an improvement in some ways on previous products, the single central wheel with the splayed out tubes and stay wires doubtless increasing the safety of landing in long grass, as it would doubtless lay the grass out on each side as the Avro chassis does. The oleo-pneumatic system of suspension was first used in an acroplane by M. Bréguet.

School Reports.

Brooklands.—At BRISTOL SCHOOL: Instructors: Messrs. Jullerot, Merriam and Stutt. Pupils with instr on machine: Lts Sanders (6), Hewitt (11), Moule (9). Strts or rolls alone: Mr. Collins (4), Lts Sanders (8), Coles (2). 8's or circles alone: Lt Lawrence (2). Machines in use: Three Bristol biplanes.

At BLÉRIOT SCHOOL.—Instructor: M. Jules Teulade. Pupils doing strts or rolls alone: Messrs. R. Creagh (14 mins), G. Pitt (24 mins), W. Treloar (48 mins), J. Brooks (20 mins), Comte FitzJames (20 mins), and Lieut.-Commander Fraser, R.N. (46 mins). 8's or circles alone: Mr. A. Crick, 8 mins. Machines in use: Blériot monos (Anzani engines).

Eastbourne.—At E.A.C. SCHOOL: Instructors: Messrs. Fowler and Morgan. Pupils with instr on machine: Messrs. Arnold, Hardstaff, Butler, and Bass-Sutton. Circles alone: Mr. Arnold. Machines in use: E.A.C. biplanes.

Hendon.—At GRAHAM-WHITE SCHOOL: Instructors: Messrs. Barrs, Howarth and Dunn. Pupils with instr on machine: Messrs. Carabajal, Hawkins, Strickland and Lister (new pupils rolling), Messrs. Duncan, Wyles, Courtney, Murphy, Liu, Hain, Stalker, Upton, Gruning. Strts or rolls alone: Mr. Palmer, Sir Archibald Sinclair, Mr. North. 8's or circles alone: Mr. Lowe, Mr. North, Mr. Shepherd. Certificates taken: Messrs. Shepherd and Lowe (G.-W. biplanes).

At HALL SCHOOL.—Instructors: Messrs. Hall, Clappen and Virgilio. Pupil circles and 8's alone: Mr. A. F. Arcier. Mr. Arcier passed part of tests for brevet on July 21st. Machine in use: Caudron biplane.

At THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. R. Desouter and R. M. Murray. 8's or circles alone: Mrs. Buller. Machines in use: Two Caudron biplanes (35 h.p.). Mrs. Buller 20 mins flight, reaching to a height of 1,000 ft.

At BEATTY SCHOOL: Instructors: Messrs. Baumann and W. Watts. Pupils with instr on machine: Messrs. Allen (9), Ruffy (30), Bentley (27), Roche-Kelly (20), Cheung (35), H. Keating (extra practice) (12), Gruning (extra practice) (25), Travers (12), Lts Maguire (12), Browning-Paterson (30), Brown (17), Settle (10) (Wright dual control biplanes).

Shoreham.—At PASHLEY SCHOOL: Instructors: Messrs. E. and C. Pashley. Pupils with instr on machine: Messrs. E. P. Roberts and H. Pashley. 8's or circles alone: W. Mortimer. Machines in use: H. Farman type (50 Gnome). Mr. B. F. Hale, late pupil, made several flights, these being his bonus flights for passing his certificate without any breakages.

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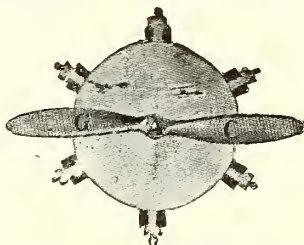
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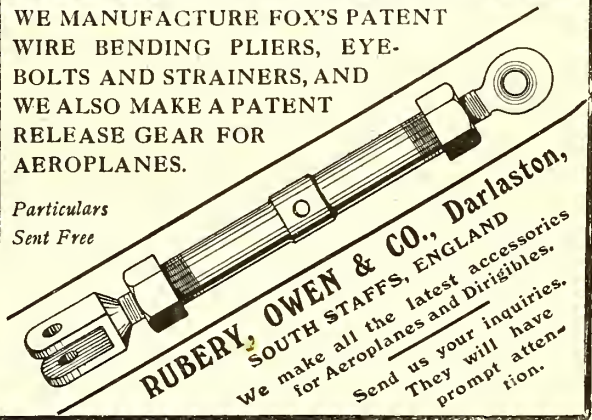
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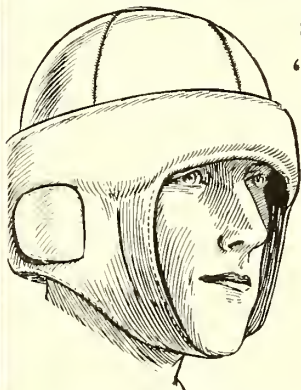
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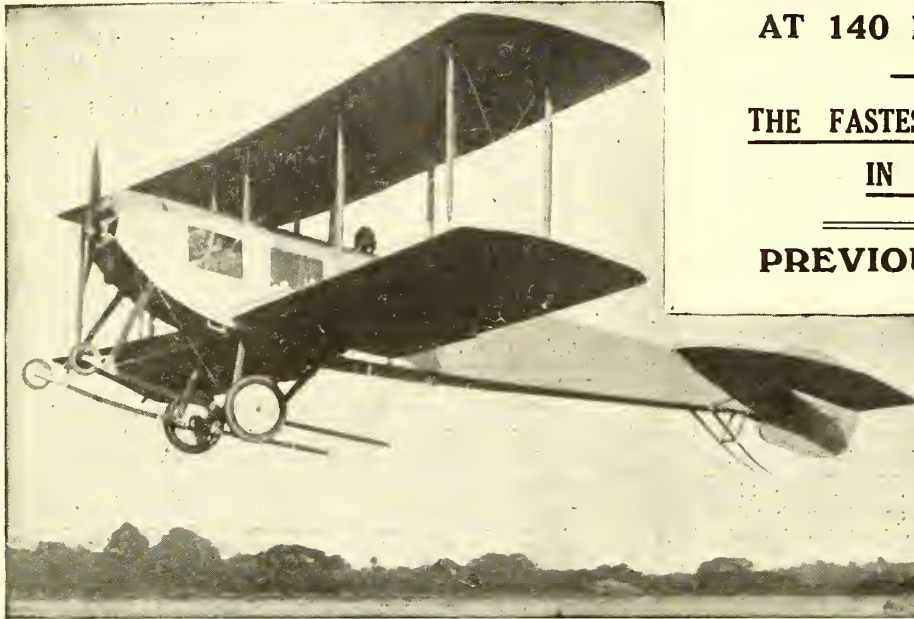
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Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O. AS A NEWSPAPER.]

WEDNESDAY, AUGUST 5, 1914.

No. 6

"CIRCUIT" PILOTS WHO WERE TO HAVE BEEN.



Left to Right. Top Row—Mr. V. Mahl, Mr. C. H. Collet, Mr. C. Howard Pixton.
Middle Row—Mr. Claude Grahame-White, Mr. F. B. Fowler, Mr. E. C. Bass.
Bottom Row—Mr. F. P. Raynham, Mr. Sidney Pickles, Mr. A. Loftus Bryan.

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WAR!

At this moment of writing it appears that this country is inevitably committed to take its part in the greatest war the world has ever seen. Thanks to the machinations of politicians who pose as statesmen the Powers find themselves grouped quite in the wrong way. Our alliance with France is as it should be, but that the two leading civilised nations should find themselves allied with Russia against Germany and Austria, is altogether unnatural. Serbia thoroughly deserves all the thrashing she gets. The Serb is an unlovely and unlovable beast, and has been so as long as history recalls, and it is utterly foolish that we should be called upon to waste men and money over what is Serbia's fault. The alliance with Russia is against all reason. "Scratch a Russian and you find a Tartar," is an ancient proverb. Scratch a Tartar and you find a Chinaman is its logical sequel. The Slav is the real "Yellow Peril," for the Slav is at bottom an Asiatic. Our alliance with Japan was an equally unnatural contract, but it was good diplomacy, for without it the Russo-Japanese war would never have taken place, and Russia would have been stronger than she is to-day. But for that war our Indian frontier would have been in greater danger than it is. If Russia comes out on top in this present war, does anyone think that her gratitude to us for our support will cause her to keep her hands off India when she can spare men from her German frontier? Those who know the Russo-Indian problem will remember the admonition of the old shikarri in Mr. Kipling's famous allegory—"Make not your peace with Adam-zad, the bear that walks like a man."

However, nothing on God's Earth can excuse Germany's unprovoked attack on France, and we have got to see France through her trouble on that account. Quite probably, by the time these notes appear, an equally unprovoked attack will have been made on our own fleet, for already the Germans are holding up our merchantmen in German ports. A smashed Germany is not as good a bulwark against the advance of the Slav peoples as a solid Germany backed by France and Italy would be, but perhaps a smashed Germany may be less dangerous than a top-heavy Germany ready to fall at any moment on us and our friends the French. Therefore, in the name of common sense let us have at it, and smash Germany thoroughly, once and for all.

Germany is built up of many incompatible elements, the Schleswiger is a Dane, and quite a good chap. The Alsatian is a Frenchman and hates Germany. The Bavarian is a peace-loving, hard-working, decent poor soul, and cordially dislikes his Prussian master. And the Pole is nothing in particular, and loathes German, Russian, and Austrian with beautiful impartiality. The German Empire dissolved into its component parts may still be a useful barrier, and not a danger. It is Prussia, as usual, who is making a beast of herself, and it is Prussia rather than Germany whom we have to fight. Of course, our cause is an unjust one, but that makes no difference. To quote the cynic's verse:—

"Thrice armed is he who hath his quarrel just,

But more so he who gets his blow in fust."

If those who misgovern us have any sense left, our First Fleet should by now have bottled up the mouth of the Kiel Canal. If it has not been done then the German Fleet is now loose in the North Sea, and our food supplies are not as secure as they ought to be.

As Napoleon said, "The Lord is on the side of the big

battalions," and our immediate duty is to see that the French Army is augmented by our whole Expeditionary Force. It only amounts to the strength of about one Army Corps of any Continental Power, but it is splendidly organised and equipped, and should account for more than its weight of any other army. With it will go the Military Wing of the Royal Flying Corps, which, considering its small size, is probably the most efficient force of its kind in the world.

The Equipment of the R.F.C.

Since Brigadier-General Sir David Henderson has had a free hand with the R.F.C. enormous strides have been made with its equipment, but he has not been able to accomplish the impossible. The smallness of the R.F.C. is due primarily to the obstinacy of the previous controllers of the War Office who did their best to discourage the production of aircraft—despite the efforts of Colonel Capper, R.E.—and, secondarily, to the dog-in-the-manger policy of the Royal Aircraft Factory, who succeeded only too well in squeezing out promising firms of aeroplane makers, and in holding back the development of others. It is also entirely the fault of the R.A.F. that we have practically no British aero engines. Both aeroplanes and engines were "crabbed" in every possible way, so that their development might be delayed until the R.A.F.'s own products were nearer to being fit for use. The R.A.F. tractor biplanes, "B.E.s" and "R.E.s," have proved successful as flying machines—though constructionally defective—but the R.A.F. engine has been a dismal failure, consequently, we can produce aeroplanes, which can be built in a month or so, but we have hardly any engines—a position aggravated by the fact that it takes as many months to make an engine as it does weeks to make an aeroplane.

Such engines as we have are all of foreign make. There is not one British-built engine in use by the R.F.C. Even those firms who are building engines in this country to foreign design have had to obtain certain of their materials abroad. Truly, a pretty state of affairs, and one for which the R.A.F. is absolutely, solely, and entirely to blame.

The question is whether we have enough spare engines in the country to make good the wastage of war. The R.F.C. has a small stock of spare engines, but, thanks to lack of official encouragement, civilian flying is in such a bad way that there are only a few low-powered engines in the country apart from those owned by the Government.

I suggest to the War Office that its wisest course is to send out orders at once for a number of single-seater "scouts" with 50-h.p. Gnomes to firms like the Bristol and Sopwith Co.s, and if those firms are too busy to turn the machines out now, let them sub-let the contracts to smaller firms like Blackburn, the Eastbourne Co., the Perry Co., the Hamble River, Luke and Co., and any others they can discover.

With 50-h.p. Gnomes these little scouts will do well over 65 m.p.h., and the engines would be far more useful in this way than if the Army bought up old school box-kites and tried to use them. Such 80-h.p. Gnomes as are available should be commandeered and used for machines of proved value such as the 80-h.p. Avros, Sopwiths, and Bristols. Firms like Vickers Ltd., the Grahame-White Co., Armstrong-Whitworths, and Handley Page, who are already at work on B.E.s, should be accelerated and supplied with all the 70-h.p. Renaults out of Maurice Farman's, and the Aircraft Manufacturing Co. should concentrate on Henri Farman's, unless their new tractor

biplane is already approaching completion—when it is ready it can be accepted without question.

It is probable that quite a reasonable number of Beardmore-Daimler, Green, and Curtiss motors are nearly ready in the works, and these should be hurried forward and used for R.E.s by the R.A.F.—for perhaps in this national emergency even the staff of that institution will sink its jealousy of certain British products, and will do its best in the country's service.

By concentrating the work of each firm on specific types large number of machines could be turned out in the next two months, and these machines would be equally valuable either for military work abroad or for coast patrols from the Naval Air Stations.

The Navy's Affair.

The Navy is, of course, even less supplied with aircraft than is the Army, for the former Lords of the Admiralty were even more hopelessly fossilised than were the people at the War Office, and Mr. McKenna was worse than useless. Since the advent of Mr. Churchill, and the appointment of Captain Murray Sueter as Director of the Air Department, wonderful progress has been made, and, better still, every possible encouragement has been given to British firms. We are better off for seaplanes than is any other country, though that is not saying much. Happily, both Short Brothers and J. Samuel White and Co. are in a position to turn out machines at short notice, and their's are undoubtedly the finest seaplanes in the world at present, for they can be used in quite heavy seas. The Sopwith Co. also are making excellent sea machines, and can deliver fairly promptly. The trouble here, as in the Army, is engines, though the Air Department has done its very best in the short time it has existed to encourage the British maker, but we probably have enough to go on with for a while.

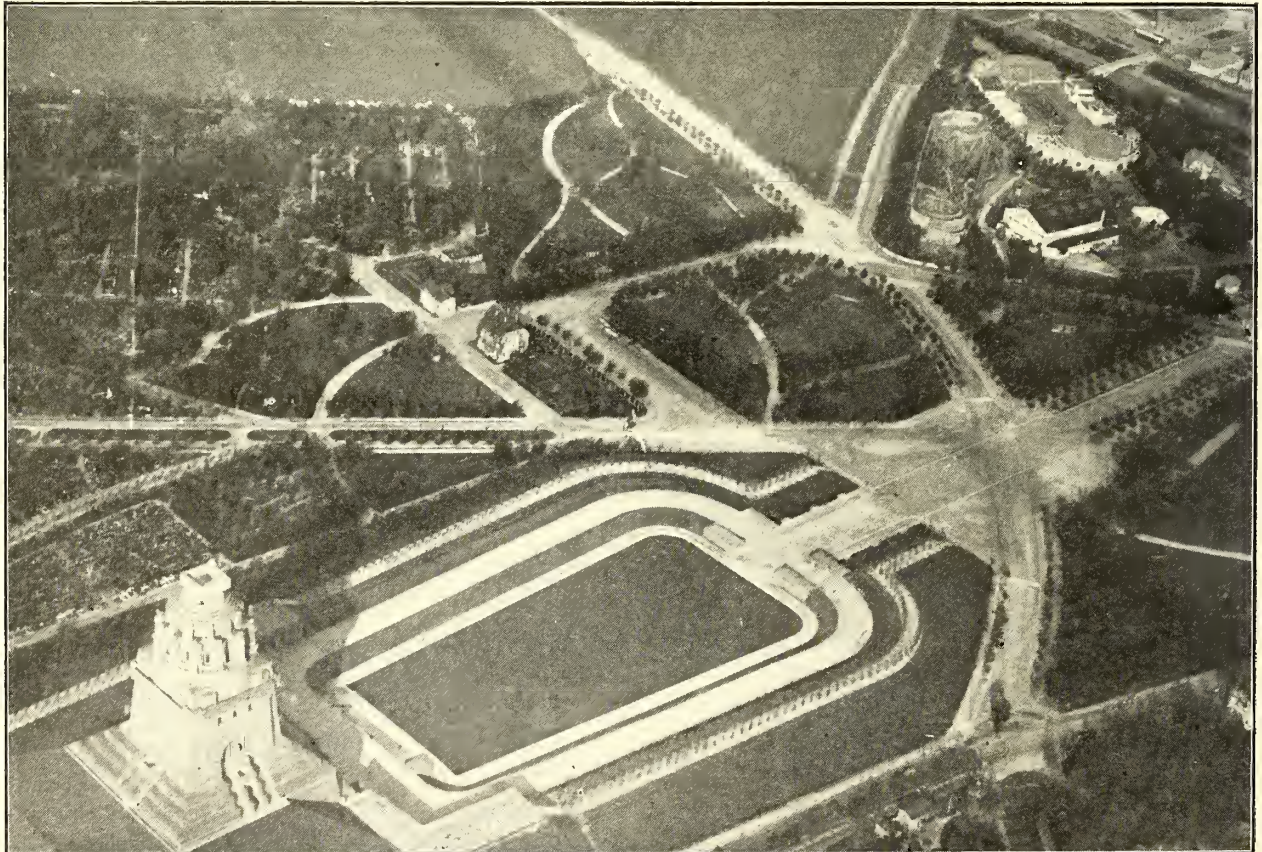
Neither we nor any other country have aeroplanes which can be launched with certainty from warships, but we have the advantage in that many of our seaplanes can get off rough water

and so can be used with a fleet at sea, while the enemy's can not. The Navy has a fair number of land-going machines quite suitable for coast-patrols, and by taking its low-powered engines out of school machines and fitting them into fast scouts, this number can be considerably increased. I venture to suggest also that light two-seater seaplanes of 80-h.p. or so, without wireless, and with small fuel capacity, can be used effectively with a fleet at sea, and that A. V. Roe and Co. could make such machines quite rapidly. Such machines would never go out of sight of the Fleet, or, at any rate, should keep company with a fast ship of the scout class, ahead of the fleet, the aeroplane being used solely for observation from a great height, and not to cover great distances. A naval observer on such a machine, piloted by a civilian volunteer perhaps, would spot hostile ships long before his own fleet was sighted, and would, at any rate, prevent surprise, thus being of defensive if not of offensive value. Such machines, carrying hand-grenades, could also be of use against a German airship accompanying a German fleet, if such an airship ventured near our ships.

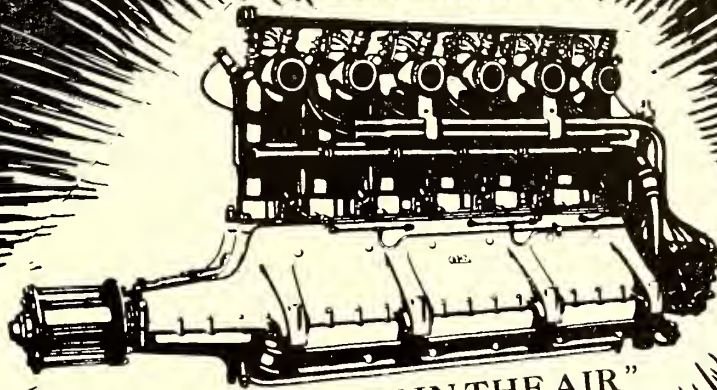
Our airships are, of course, quite without value in this war, except for coast patrol work in fair weather and within a strictly limited district.

Taking it all round, our position, so far as aircraft are concerned, might be worse, and for this we must thank the energy of the Air Department at the Admiralty and the Department of Military Aeronautics. But it ought to be a great deal better, and it is to be hoped that when the war is over someone in authority will have sufficient strength of character to lay the blame where it is deserved.

Finally, on behalf of all concerned with aircraft, one wishes the officers and men of the Royal Naval Air Service, and of the Royal Flying Corps, success in the great task which lies before them, and a happy issue out of all their dangers.—C. G. G.



GERMANY FROM ABOVE.—On left the great monument at Leipsic erected in memory of Napoleon's defeat of 1813. Next it is an ornamental lake, and in right top corner the switch-back and entertainment halls of the Leipsic Exhibition.



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The Royal Aero Club.

A meeting of the Committee was held on Tuesday, July 28th, 1914, when there were present:—Col. H. C. L. Holden, C.B., F.R.S., in the Chair, Mr. Ernest C. Bucknall, Prof. A. K. Huntington, Major F. Lindsay Lloyd, Mr. F. K. McClean, Mr. Mervyn O'Gorman, C.B., Mr. C. F. Pollock, Mr. T. O. M. Sopwith, and the Secretary.

The following Aviators' Certificates were granted:—

838, 1st Class A. M. William Boyle Power, R.F.C. (Maurice Farman biplane, Central Flying School, Upavon), July 1st, 1914; 839, Master Mariner Alfred William Clemson, R.N.R. (Vickers biplane, Vickers School, Brooklands), July 14th, 1914; 840, Lieut. Alastair St. John Munro Warrand (Black Watch), (Vickers biplane, Vickers School, Brooklands), July 14th, 1914; 841, Thomas Forster Rutledge (Bristol biplane, Bristol School, Brooklands), July 14th, 1914; 842 (Hydro-aeroplane), Rear-Admiral Mark Edward Frederic Kerr (Sopwith biplane, Royal Hellenic Naval Air Station, Elousis, Greece), July 14th, 1914; 843, Percy Dickson Robinson (Grahame-White biplane, Grahame-White School, Hendon), July 16th, 1914; 844, Henry John Lloyd (1st Class Stoker, R.N.) (Maurice Farman biplane, Central Flying School, Upavon), July 17th, 1914; 845, William Campbell Adamson (Bristol biplane, Bristol School, Brooklands), July 17th, 1914; 846, Stephenson MacGordon (Sopwith biplane, Sopwith School, Brooklands), July 17th, 1914 (subject to permission of Aero Club of America); 847, John Scott Bradbury Winter (Grahame-White biplane, Grahame-White School, Hendon), July 18th, 1914; 848, Henry Pagan Lowe (Grahame-White biplane, Grahame-White School, Hendon) July 20th, 1914; 849, Arthur Gelston Shepherd (Grahame-White biplane, Grahame-White School, Hendon), July 21st, 1914; 850, William Percy Parker (1st Air Mechanic) (Maurice Farman biplane, Central Flying School, Upavon), July 21st, 1914; 851, Lieut. Thomas Ralph Wells (33rd Punjabis), (Vickers biplane, Vickers School, Brooklands), July 21st, 1914; 852, Lieut. Angus George Gillman, R.H.A. (Vickers biplane, Vickers School, Brooklands), July 21st, 1914; 853, Capt. Harry Tailour Lumsden (Cameron Highlanders), (Vickers biplane, Vickers School, Brooklands), July 22nd, 1914; 854, Thomas Hinshelwood (Vickers biplane, Vickers School, Brooklands), July 27th, 1914.

Accidents Investigation Committee.—It was unanimously resolved that the following statement be published:—

The Committee of the Royal Aero Club has had its attention called to an article which has appeared in one of the journals devoted to Aviation, on July 8th, 1914, over the initials, "C. G. G.," dealing with a report of the Accidents Investigation Committee.

The Committee considers that the statements made in this article are untrue and uncalled for, and that the writer has improperly attacked the Accidents Investigation Committee by deliberately imputing unworthy motives without any foundation.

Accidents Committee Reports.

Report No. 25.—Report on the fatal accident to Capt. Clement Robert Wedgwood Allen, R.F.C., and Lieut. James Edward Godfrey Burroughs, R.F.C., when flying at Netheravon, Salisbury Plain, on Wednesday, March 11th, 1914, at about 9.25 a.m.

Brief Description of the Accident.—Capt. C. R. W. Allen was flying a B.E. biplane, No. 204, fitted with an 80-h.p. Gnome engine, with Lieut. J. E. G. Burroughs as passenger, at Netheravon, Salisbury Plain, on Wednesday, March 11th, 1914. The aircraft, which had been in the air about five minutes, had made nearly a complete circuit and was turning in the direction of the sheds. When at a height of about 350 feet, the rudder was seen to leave the aircraft, which then made a spiral dive to the ground. The pilot and passenger were both killed, and the aircraft was completely wrecked.

Report.—The Committee sat on June 16th and 30th and July 14th and 27th, 1914, and received the report of the Club's representative who visited the scene of the accident within a short time of its occurrence, together with the evidence of eye-witnesses. The Committee also had before them the report of the National Physical Laboratory, dated May 20th, 1914, on the fracture of the rudder-post of B.E. biplane No.

204. In this report the condition of the metal of the steel tube which formed the rudder-post had been very thoroughly investigated. The Committee was also furnished with the results of mechanical tests on similar rudders manufactured at the same time.

From the consideration of the evidence the Committee regards the following facts as clearly established:—(1) The aircraft was built by the Royal Aircraft Factory in June, 1912. (2) There was practically no wind at the time of the accident. (3) The main rudder tube was fractured at the base of the rudder just below where the rudder-post passes through the frame of the rudder and is welded to it. (4) The rudder which became detached from the aircraft in the air was picked up 126 yards from the spot where the aircraft fell. (5) The control wires were found to be intact.

Opinion.—The Committee is of opinion that the rudder was sufficiently strong to withstand the ordinary stresses of flying, but was insufficiently strong to resist the greatly increased stresses of modern flying and rough usage, and had probably been damaged in this way prior to this particular flight.

Recommendation.—In consequence of the greatly augmented stresses now imposed on aircraft, due to the increased skill and daring of aviators in high winds, in connection with sharp turns and similar manoeuvres, it is recommended that the attention of constructors be drawn to the necessity of making due allowances for these increased stresses, combined with proper allowances for deterioration due to wear and tear, and the possibility of flaws in the materials themselves.

Report No. 26.—Report on the fatal accident to Mr. Erwart Temple Haynes when flying as a passenger with Mr. Ronald C. Kemp, at Wittering, near Chichester, on Monday, February 23rd, 1914, at about 11.45 a.m.

Brief Description of the Accident.—Mr. Ronald C. Kemp was flying an F.E. biplane, fitted with a 70-h.p. Renault engine, at Wittering, near Chichester, on Monday, February 23rd, 1914, at about 11.45 a.m., with Mr. E. T. Haynes as a passenger. The flight lasted about 5 minutes, and from a height of about 500 feet the aircraft was observed to be making a steep right-hand spiral descent, but not heavily banked. The spiral descent continued until the aircraft hit the ground. The aircraft was completely wrecked, the pilot, Mr. R. C. Kemp, sustained serious injuries, and the passenger, Mr. E. T. Haynes, was killed.

Report.—The Committee sat on July 14th and 27th, 1914, and received the report of the Club's representative who visited the scene of the accident within a short time of its occurrence, together with the evidence of eye-witnesses. Mr. Kemp also attended and gave evidence.

From the consideration of the evidence the Committee regards the following facts as clearly established:—

1. The aircraft was an experimental one and was built at the Royal Aircraft Factory, Farnborough, in August, 1913.
2. The wind at the time of the accident was about 30 m.p.h.
3. The pilot, Mr. R. C. Kemp, had flown the aircraft previously in several tests at Farnborough, under similar conditions of load.
4. The control wires were found to be intact.
5. The field where the pilot got into the aircraft was wet and muddy.
6. The pilot remembers nothing that occurred on the day of the accident.

Opinion.—The Committee is of opinion that there is no positive evidence to show why the accident occurred, but such evidence as is available points to the conclusion that the most probable cause was that the pilot's foot slipped over the rudder-bar, and that he thus lost control.

166, Piccadilly, W.

HAROLD E. PERRIN, Secretary.

A Personal Note.

It will be noted that the Committee of the Royal Aero Club, as distinct from the Accidents Committee, has done me the honour of passing and publishing a vote of censure on me for my article on the Accidents Committee's report on the death of Captain Downer. The honour would have been more appreciated if the constitution of the Committee which conferred it had inspired more confidence. The opinion of only two mem-

G.H. WATSON. 1914



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World's Height Record to
7,760 METRES (25,460 ft.)

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

bers sitting at that particular meeting are entitled to consideration on such a subject, and as those two happen to be gentlemen they would doubtless realise that whatever their private opinions might be, their positions as committeemen made it necessary for them to agree to the resolution, which had to be passed unanimously or not at all. Also, they probably disagreed with my action in publishing such an article, even if they did not wholly disagree with my arguments. The rest of the members at that meeting are not closely in touch with aeroplane construction, with the exception of Mr. O'Gorman, Superintendent of the Royal Aircraft Factory. I am unaware whether Mr. O'Gorman voted on that resolution or not, but his name appears in the official list of those present at the meeting, so one is, at least, entitled to say that if he did so it was a somewhat peculiar proceeding, in that he is officially, though certainly not personally, responsible for the machine which was criticised in my article—I believe that, fortunately for his reputation as an engineering expert, he is not personally the perpetrator of any of the detail design. If he did vote on the resolution he was in an obviously invidious position, in that his presence would have been liable to limit free expression of opinion, the issue being in a great measure between my statements and the products of the Government Department which he represents.

As regards the article itself—to quote the late Mr. Chamberlain, "What I have said, I have said. I withdraw nothing." I hereby challenge the Committee to show that any of the statements in the article are "untrue." The columns of this paper are at the Committee's disposal, since its own official organ cannot well devote its space to the doings of another paper.

As to the statements being "uncalled for," that is purely a matter of opinion. I am only concerned with seeing that the officers and men of the Royal Flying Corps are not asked to risk their lives on unsafe machines. Whether I overstep the bounds of good taste, as understood by the Committee, or whether I exceed what in England are considered the duties of the editor of a newspaper, is my affair. The Committee is not sufficiently in touch with practical aviation to say whether the article was uncalled for, and I am prepared to go before that Committee and argue that the article was not only justifiable but deserved.

As to the imputation of unworthy motives to the Accidents Committee, if the Accidents Committee issues reports which fall so far short of their proper purpose as to read like apologies for an incompetent Government Department, it deserves to have unworthy motives imputed to it, but, as a matter of fact, I did not impute any motives at all. I regretted what seemed to be the attitude of the Accidents Committee, and asked a plain question. I recommend the Committee of the Club to study the English language, and also to make sure that when it wishes to pass censorious resolutions all the members voting thereon are free from bias.

So far from repenting of my evil ways, I add to my offence by saying here that the reports published in this issue on the deaths of Captain Allen and Mr. Burroughs, and Mr. Haynes, on two machines built by the Royal Aircraft Factory are even more lamentable documents, and are even more calculated to destroy faith in the Accidents Committee. I do not impute motives, I do not say that influence was brought to bear, I do not say that the presence at the meetings of the Accidents Committee of anyone interested in those machines cramped freedom of discussion, but I do say that those reports fall far short of what it was the Accidents Committee's duty to publish.

In Captain Allen's case the "opinion" reported would be ludicrous if the occasion were not so tragic, and so with the "recommendation." They simply amount to saying that a pilot on a Government-built machine must not handle his controls brusquely for fear the whole thing may come to pieces. From the "opinion," anyone ignorant of the facts would be justified in assuming that Captain Allen was putting a "greatly increased stress" on the rudder, or subjecting it to "rough usage." In fact, he was making a very mild turn, such as anyone might do on a school box-kite. In the "recommendation," all the clap-trap about "increased skill and daring," and so forth, tend to convey the same idea—the idea conveyed in the reports on Captain Downer and on Mr. Haynes—namely, when a machine of Government design kills anyone,

blame the pilot. There is absolutely no other sense to be read into the report.

When other machines, built by private constructors, have killed people, was any blame put on the pilot? Never a word. There were "opinions" and "recommendations" about absence of belts, absence of helmets, absence of revolution indicators or wind-speed indicators, lack of strength in wings, or controls—any amount of implied condemnation of the builder or owner of the machine, but in the Government machines it is the pilot who is blamed.

In the report on Mr. Haynes it is the same—"the most probable cause was that the pilot's foot slipped." What if it did? Why could not the machine be righted as Mr. Brock's Blériot was righted at Hendon? In both Captain Allen's case and Mr. Haines' the deaths were caused by sheer culpable ignorance on the part of designers who, on the showing of Government Blue Books, ought to have known better. Also, if the Accidents Committee could not do so, I, at any rate, can find half-a-dozen witnesses to show that F.E.2 was unfit to fly before ever the pilot blamed for the accident took her over at all.

Either the Accidents Committee, as constituted when it drew up these reports, is so ignorant of aeroplane design as to be unworthy of serious consideration, or it has let itself be talked over by interested parties, or it is afraid to express an opinion where Government machines are concerned. I impute no motives, I simply state what appear on the face of its own reports to be the facts. The Accidents Committee or the Committee of the Club can please themselves as to which cap fits.

The unofficial explainer for the Royal Aircraft Factory, the aeronautical correspondent of the "Times" newspaper, is singularly unfortunate in rushing to defend these reports before they have been criticised. He quotes the "opinions" and "recommendations" at length, and winds up by saying: "The Reports above given, though they will doubtless arouse a storm of indignation among those who have not hesitated to condemn unheard the designers and builders of the machines in question, will tend to confirm the confidence placed in the R.A.F. by the Department of Military Aeronautics, for whom the safety of our pilots is the first consideration."

So great is the confidence placed in the R.A.F. that the Department of Military Aeronautics has created a new Department, called the Aeronautical Inspection Department, part of whose duty it is to inspect and censor the R.A.F.'s work. So great is that confidence that practically every recommendation made in this paper for the alteration of R.A.F. designs has been carried out. Ailerons are now fitted instead of a warp, rudder posts and tail planes are stayed almost properly, stronger rudder and elevator frames have been fitted, inherently stable machines have been produced, the internal wing construction has been altered, and the rear spars of the wings have been shifted to stop the "flicking" of the wings. Further, the R.A.F.'s powers have been so curtailed that it is now simply an experimental and producing factory, and is not a buying department in a position to "queer the pitch" of aeroplane or engine makers, as it formerly succeeded in doing. Perhaps the "airmanship expert" of the "Times" will explain how these alterations, all made after the faults had been exposed in this paper, betoken the confidence of the D.M.A. Also, perhaps he will explain why the Navy refuses to have anything to do with the R.A.F., and has set up a Civil department of its own to inspect designs. One really expects more technical knowledge and accuracy from the "Times."—C. G. G.

Prohibition.

The Home Office issued the following notice on Saturday:—
In pursuance of the powers conferred on me by the Aerial Navigation Acts, 1911 and 1913, I hereby make for the purposes of the safety and defence of the Realm the following Order:—

I prohibit the navigation of aircraft of every class and description over the whole area of the United Kingdom, and over the whole of the coastline thereof and territorial waters adjacent thereto.

This Order shall not apply to naval or military aircraft, or to aircraft flying under naval or military orders; nor shall it apply to any aircraft flying within three miles of a recognised aerodrome.

(Signed) R. McKenna,

One of his Majesty's Principal Secretaries of State.

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The Circuit Seaplanes.

BY W. H. SAYERS.

Owing to the war, the Seaplane Circuit has been postponed, but the following descriptions of the machines, written before the postponement, are of interest, as those of them which perform well will certainly be bought by the Navy:—

The Sopwith Tractor.

Of the two machines entered by the Sopwith Aviation Co., Ltd., that to be flown by Mr. Mahl is a tractor biplane of the same general type as the well-known "scouts" produced by this firm, but of considerably greater span and overall length. The fuselage is of rectangular section with a 100-h.p. British-built monosoupape Gnome mounted under the characteristic Sopwith cowl for such motors.

The planes are of an equal span of 36 ft. and a chord 5 ft. 1½ in., which is increased at the tips of the ailerons to 5 ft. 7½ in. The wings are staggered by 1 ft. and have a dihedral of 2 degrees, and their total surface is 330 sq. ft. There are two pairs of struts on each side outside the fuselage, with an appreciable overhang of plane beyond the outer pair. All the boxes are braced up rigid, and balanced ailerons are fitted instead of a warp. Passenger and pilot are seated in tandem, the former preceding, and the latter occupying a position level with the rear edge of the lower plane—which is cut back at the body to improve his view downwards. A fixed tailplane, a segment of a circle in plan and with divided elevator flaps attached, and a fixed fin and a large unbalanced rudder are mounted on the end of the fuselage.

Twin unstepped floats of 2,000 lbs. flotation capacity each 12 ft. 6 in. long, 2 ft. beam, and of a maximum depth of 1 ft. 6 in. are supported from a steel tube undercarriage. The floats are carried on a hinged joint at their front support and through a semi-elliptic leaf spring at the aft support. No wing-tip floats are fitted, but a tail float of 200 lbs. flotation capacity and a water rudder are carried beneath the tailplane.

Tanks are provided for 35 gallons of petrol, equal to 3½ hours' flight. Empty, the machine weighs 1,550 lbs., with pilot, passenger and full tanks 2,190 lbs., or nearly 7 lbs. per sq. ft. At this load a speed range of 80-60 m.p.h. is expected.

The most noticeable features of this machine are:—The smallness of the gap relatively to the chord, giving the planes a squat appearance, and the curious effect given by the shape of the motor cowl, which looks rather like a head of some monstrous and very noxious insect. Also, the "emergency exit" over the passenger's head is a distinctive and useful feature. The spars, where they cross this gap, are streamlined to form two small fat planes, so that they probably lift more than their own weight, and it is possible that this gap actually adds to efficiency, as there is no "jamming" of the air between the fuselage and the upper plane.

The Beardmore Biplane.

The Beardmore D.F.W. to be flown by Mr. Collet is a large "arrow"-type biplane mounted on twin floats. The fuselage is built of steel tube welded up solid and wire braced, rectangular in section with a rounded streamline entry forward. The motor, a Beardmore-Austro-Daimler of 120-h.p., is mounted in the nose with the cylinder tops projecting.

The planes are tapered and swept back in plan, with the leading edges curved back at the tips to meet the trailing edges. The planes are very heavily staggered and are of 44 ft. (upper) and 40 ft. (lower) span, with a surface of 450 sq. ft. Ailerons of triangular form are fitted to the upper planes only, and these are set normally at a slight negative angle. The upper planes are supported from a four-legged steel cabane built into the fuselage, and two pairs of steel tube interplane struts per side are employed. These are fitted with a very simple quick detachment fitting which permits of dismantling or reassembling the planes in 5 minutes.

A fish-tail shaped flat plane, whose angle of incidence is variable, is fitted at the end of the fuselage, and is surmounted by a triangular fixed fin. Divided elevator flaps and an unbalanced rudder are employed.

Twin floats 14 ft. long and pitched 9 ft. apart are carried

on a chassis consisting of two oval steel tube M's, tied across the bottom by a steel tube crossmember, the apices of these joining the two lower fuselage longerons under the motor and under the rear spar of the lower plane, respectively. The floats are sprung. A small float is fitted beneath the tail.

The weight of the machine empty is 1,500 lbs., with pilot, passenger, and fuel and oil for 6 hours, the weight will be just about one ton. A speed range of from 45 to 80 miles per hour, and a climb of over 300 feet per minute, are predicted.

This machine can be easily recognised by the swept back wings giving the effect of an arrow head. Another marked characteristic is the short length compared with the span.

The Sopwith Bat-boat.

The Sopwith Bat-boat to be flown by Mr. Pixton is very similar to that exhibited at the Aero Show at Olympia. A 200-h.p. Sunbeam engine is to be fitted instead of the Salmson, and the hull is lower relatively to the planes.

The boat is 20 ft. long overall, with a 4 ft. 4 in. maximum beam and 3 ft. 6 in. maximum depth. One step is built in the bottom well aft, with scoops on the side of the hull to supply air to the step. The front end of the hull is covered by a turtleback deck, which terminates just forward of the seats.

Behind the seat the main planes are carried on a set of extremely substantial struts immediately under the centre set of interplane struts, which again are of massive proportions and carry the engine bearers somewhat above the centre of the gap. The planes are of unequal span, 45 ft. bottom, 55 ft. top, with a chord of 6 ft. 9 in. and a gap of 6 ft. The upper plane is staggered some 1 ft. 6 in. forward of the lower, and balanced ailerons are fitted to both planes. The lower plane has a dihedral of 3 deg., and is fitted with wing-tip floats.

The tail is carried on open tail-booms from the planes, and consists of a large fixed cambered surface followed by divided elevator flaps and a large balanced rudder mounted mainly below the tail plane.

The main planes have a total surface of 600 sq. feet. The weight empty is 2,300 lbs., with tanks for 70 galls. (5 hours) full, pilot and passenger, the total weight is 3,120 lbs., and a speed range of 48 to 75 miles per hour is expected.

This machine should be recognisable by its large size, the boat body of considerable beam and short length projecting far forward, and by the open tail-booms.

The Grahame-White Tractor.

The machine entered by the Grahame-White Aviation Co. is a tractor hydro-biplane of very small overall dimensions. The fuselage is of rectangular section, running to a horizontal knife-edge at its rear extremity, as in the Moranes, carrying at the front a 100-h.p. British-built Monosoupape Gnome under a cowl of spheroidal shape. The wings are heavily staggered, of 27 ft. 10 in. span, 5 ft. 6 in. chord, and 5 ft. 6 in. gap, and a total surface of 300 sq. ft. These planes have only one set of interplane struts per side, but this set of struts consists of three instead of the usual two, two performing the usual function of such members and the third being a vertical strut from the front spar of the lower plane to the rear spar of the upper plane and taking the part of the usual cross-bracing between the two normal struts. The upper plane alone is fitted with ailerons.

The tail consists of a pair of balanced elevators à la Morane, a fixed tail fin and a large rudder.

Twin stepped floats, each 14 ft. 10 in. long, 1 ft. 9½ in. beam and 1 ft. 2 in. depth, are carried 7 ft. apart on a steel tube chassis of simple form, and a tail float is fitted beneath the rudder.

Tanks for fuel and oil for five hours' running are provided. The machine empty weighs 1,000 lbs., with full load about 1,800 lbs., equivalent to a loading of 6 lbs. per sq. foot.

The most striking features of the machine are: (1) Its small size; (2) The great stagger on its planes; (3) The single set of interplane struts and the curious third vertical strut therein; and (4) The Morane-like tail.

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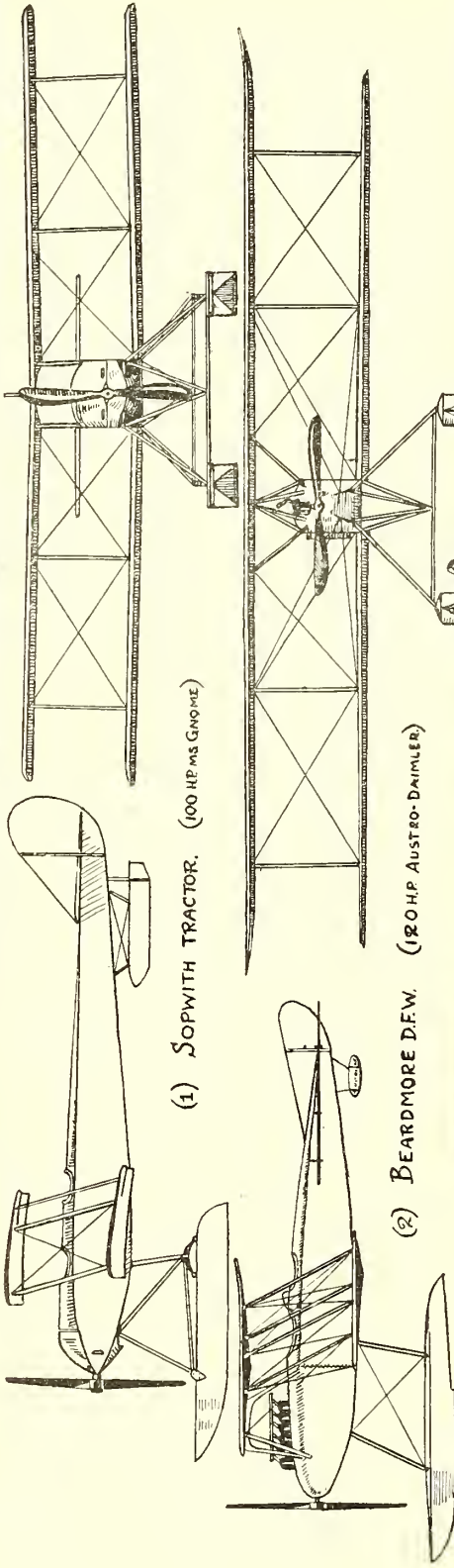
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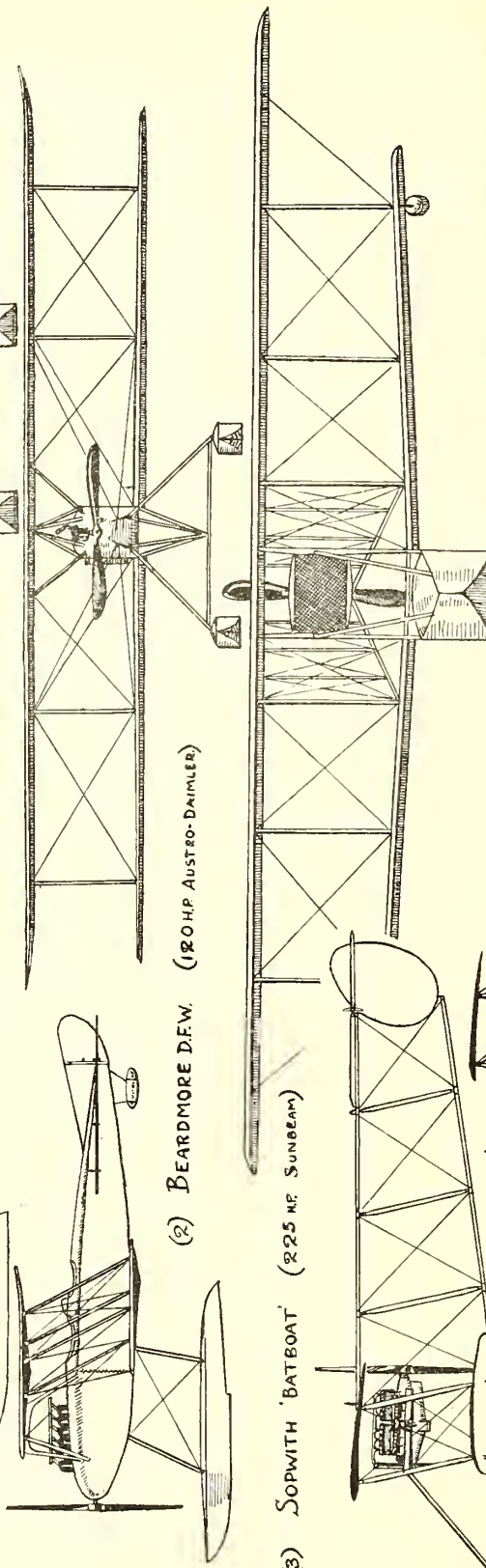
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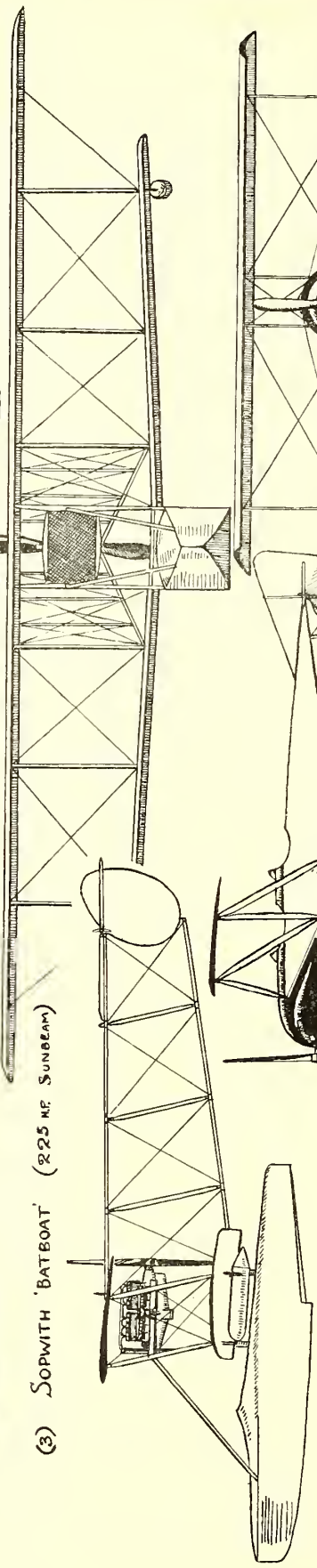
Side and End Views (Drawn to Scale) of the Seaplanes built for the Circuit.



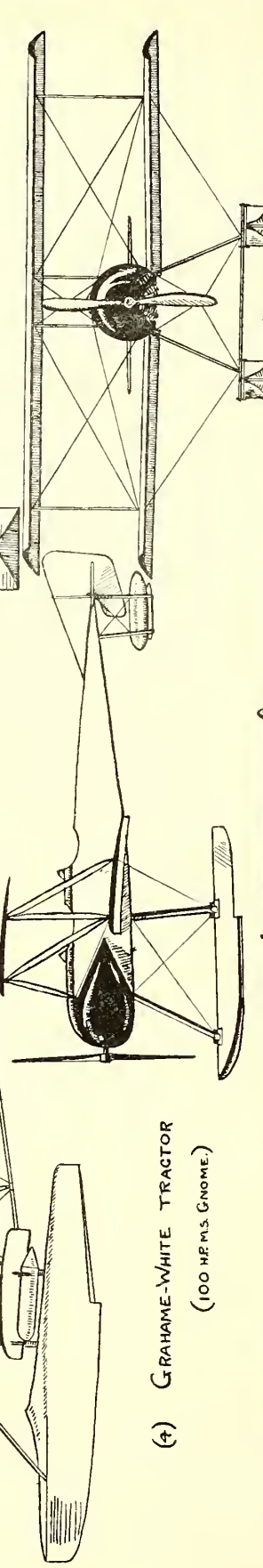
(1) SOPWITH TRACTOR. (100 HP. M.S. GNOME)



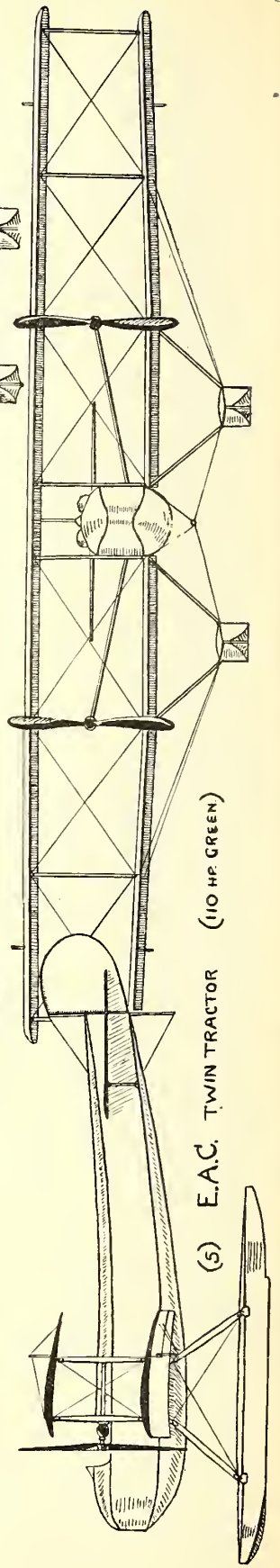
(2) BEARDMORE D.F.W. (120 HP. AUSTRÖ-DAIMLER)



(3) SOPWITH 'BATBOAT' (225 HP. SUNBEAM)

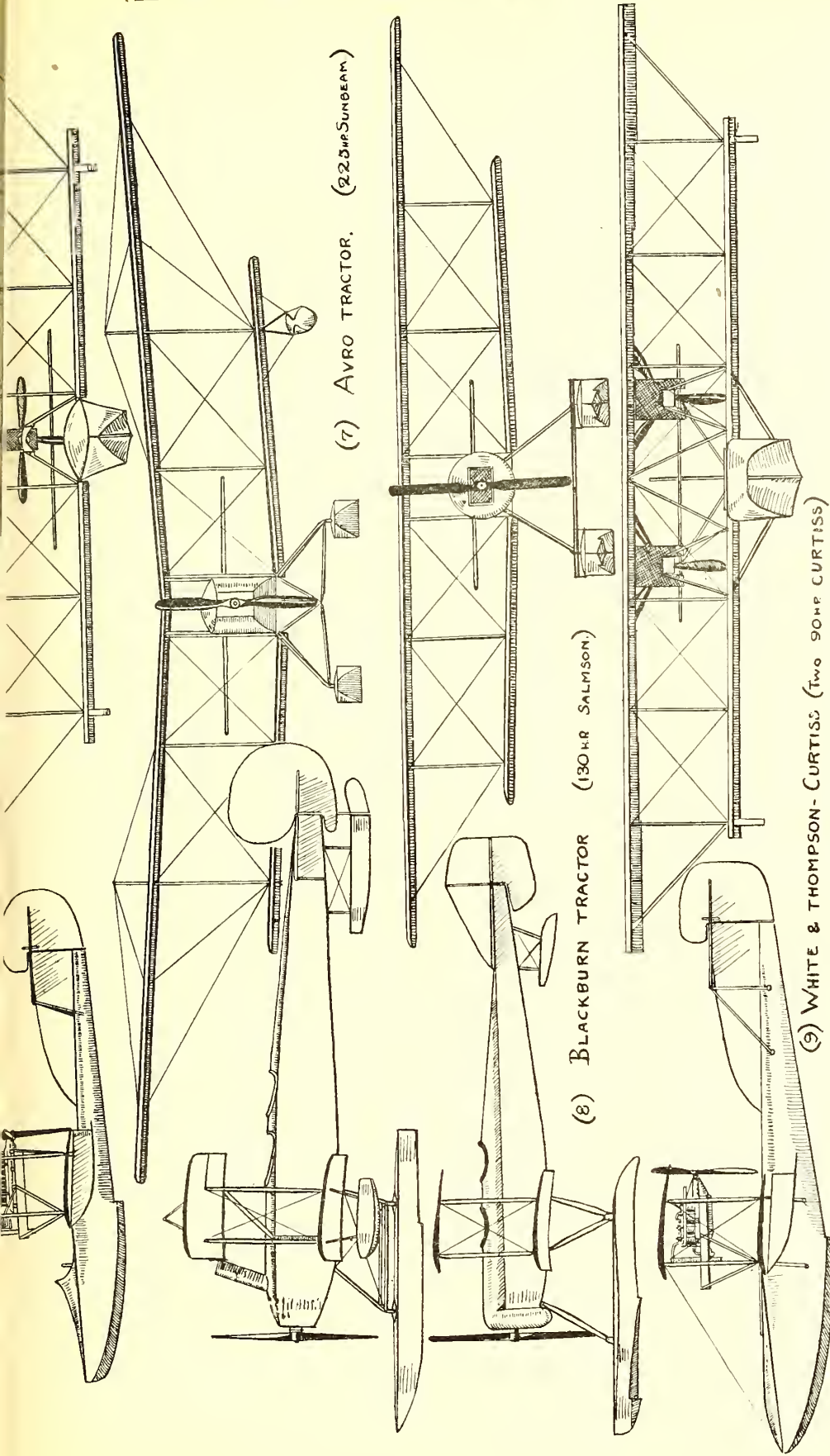


(4) GRAHAME-WHITE TRACTOR (100 HP. M.S. GNOME)



(5) E.A.C. TWIN TRACTOR (110 HP. GREEN)

(6) WHITE & THOMPSON-CURTISS (120 HP. AIRCO-DAIMLER)



(7) AVRO TRACTOR. (225HP SUMBEAM)

(8) BLACKBURN TRACTOR (130HP SALMSON)

(9) WHITE & THOMPSON-CURTISS (TWO 90HP CURTISS)

the inner pair of interplane struts, the float base being stayed by appropriate bracing wires.

Tanks are fitted for 70 gallons of petrol and 6 gallons of oil, corresponding to 7 hours' running. Empty the estimated weight of the machine is 1,850 lbs. and the load—pilot, passenger, fuel, oil, and water—amounts to a further 900 lbs., a total of 2,840 lbs., giving a loading of just over 4 lbs. per sq. foot. It is expected that the speed range of the machine will be from 45 to 65 m.p.h., which is probably a conservative estimate.

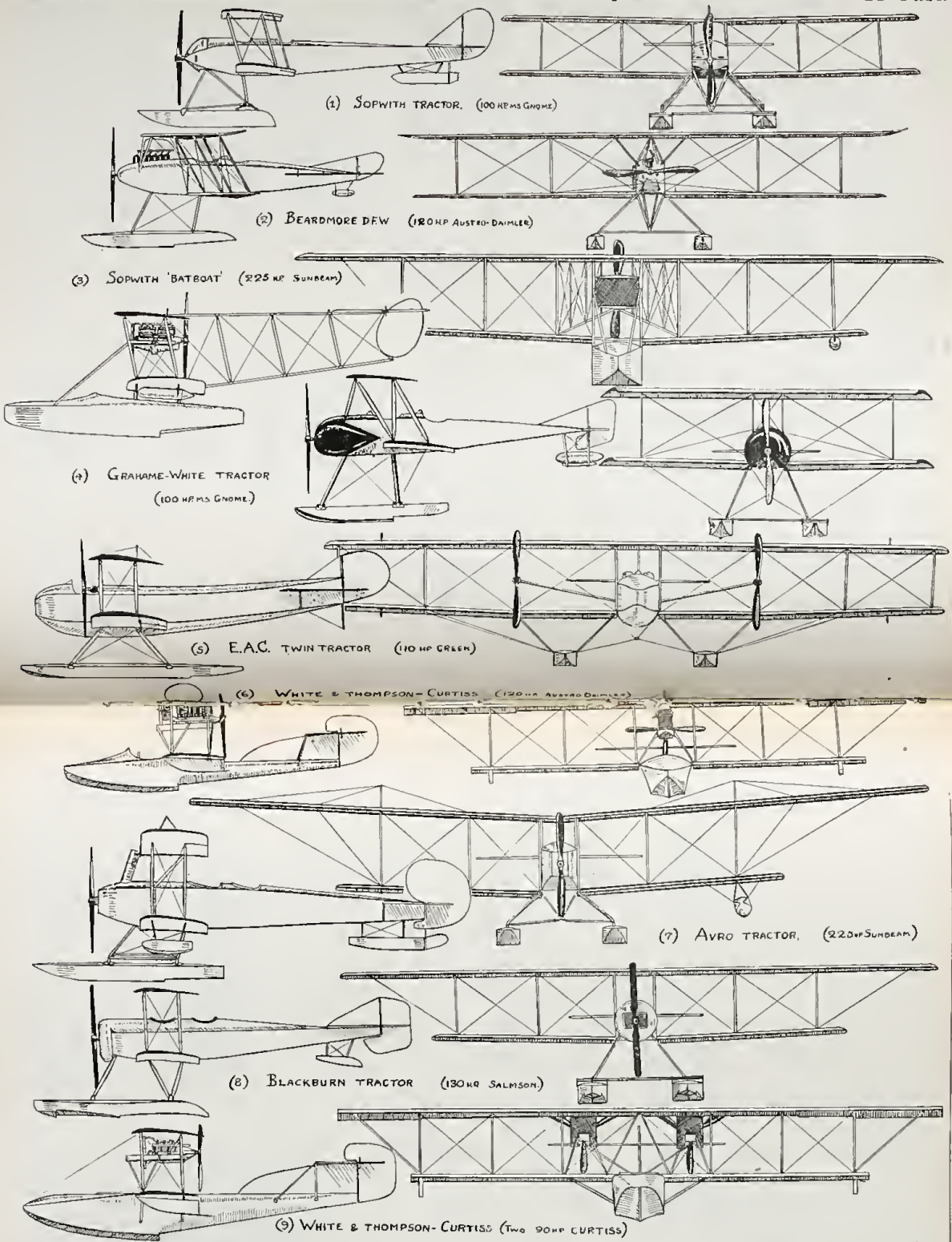
This machine's most obvious feature is the possession of twin tractor screws. When this feature is unrecognisable the large size of the fuselage and the marked upward curve thereof towards the tail enable it to be easily identified.

to act as an emergency float in case a rear compartment of the main floats should puncture and let the machine sink by the tail.

The main planes are of equal span, arranged with three bays per side, and the lower plane has a dihedral angle of 3 deg. The span is 54 ft., the chord 6 ft. 6 in., and the gap 6 ft., giving a total lifting surface of 700 sq. ft. Large balanced ailerons are fitted on both planes operated by a wheel on the control column.

The twin floats are stepped boat-shaped structures 19 ft. long by 2 ft. beam with V bottoms forward, and are pitched 12 ft. apart, giving sufficient lateral stability on the water to dispense with wing-tip floats. Each float is supported by one pair of stout struts raking outwards from the fuselage to the float and a second pair raking outwards from the float to the lower plane spars under

The E.A.C. Twin-Tractor.
 One of the most interesting of the entries is that built by the Eastbourne Aviation Co., Ltd., and to be piloted by Mr. Fowler. This machine is a twin-tractor fuselage biplane with two 8 ft. 6 in. diameter propellers supported by the interplane struts on each side of the fuselage driven by bevel gear and shafts from a single 110-h.p. 6-cyl. Green engine within the fuselage. Pilot and passenger's seats are side by side and in front of the main planes, with motor behind them. The fuselage is of the normal box-girder type, with ash longerons and spruce struts, of very roomy proportions. The fuselage longerons sweep up markedly to give water clearance to the tail, which with the great length of the main floats evades the fitting of a tail float. A safety tank is fitted in the last bay of the fuselage



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The main planes are of equal span, arranged with three bays per side, and the lower plane has a dihedral angle of 3 deg. The span is 54 ft., the chord 6 ft. 6 in., and the gap 6 ft., giving a total lifting surface of 700 sq. ft. Large balanced ailerons are fitted on both planes operated by a wheel on the control column.

The twin floats are stepped boat-shaped structures 39 ft. long by 2 ft. beam with V bottoms forward, and are pitched 12 in. apart, giving sufficient lateral stability on the water to dispense with wing-tip floats. Each float is supported by one pair of stout struts raking outwards from the fuselage to the float and a second pair raking outwards from the float to the lower plane spars under

the inner pair of interplane struts, the float base being stayed by appropriate bracing wires.

Tanks are fitted for 70 gallons of petrol and 6 gallons of oil, corresponding to 7 hours' running.

Empty the estimated weight of the machine is 1,850 lbs. and the load—pilot, passenger, fuel, oil, and water—amounts to a further 960 lbs., a total of 2,810 lbs., giving a loading of just over 4 lbs. per sq. foot. It is expected that the speed range of the machine will be from 45 to 65 m.p.h., which is probably a conservative estimate.

This machine's most obvious feature is the possession of twin tractor screws. When this feature is unrecognisable the large size of the fuselage and the marked upward curve thereof towards the tail enable it to be easily identified.

The Avro Tractor.

The biplane entered by A. V. Roe and Co., Ltd., while distinctly Avro in type, varies in many respects from previous machines of the same mark.

The fuselage, 20 ft. long, of rectangular section with a rounded top, is generally similar to that of the well-known 80 Gnome standard Avro, with the necessary modifications of the front end to accommodate the 8-cylinder 150-h.p. Sunbeam motor, with which it is fitted. The cooling air intake for the motor is through an opening in the nose of the fuselage, and the outlet, after passing the radiator is through louvres in the side of the body, and the exhaust from the motor is carried off by a large streamline funnel to just above the upper plane.

Passenger and pilot's seat are in tandem, the passenger being over the trailing edge of the lower plane with the pilot well behind. The empennage consists of a large rectangular fixed tail plane 14 ft. by 3 ft. 6 in. with divided elevator flaps appended, and a large balanced rudder.

The main planes are not staggered, have a dihedral of 3 deg., and the upper plane is of much greater span (63 ft.) than the lower (38 ft.). Both are of 6 ft. chord giving a total surface of 564 sq. ft. Balanced ailerons are fitted to the upper plane only, and the wings are arranged to fold alongside the body on a new system patented by A. V. Roe and Co., Ltd.

The float base is of very heavy steel tube of exactly similar form to that shown on an 80-h.p. machine at the last Olympia Show. The twin floats, which are 16 ft. 7 in. long by 2 ft. beam, and spaced 9 ft. apart, are pointed at bow and stern and fitted with one step. They are rubber suspended from the ends of the main float base tubes, which pass into the floats through a sort of leather bellows, all the springing gear being enclosed within the float itself, as in the Olympia machine already referred to. The floats weigh 200 lbs. each and are very strongly built, the bottoms being fitted with a Duralumin sheathing. A large tail float is carried under the rear end of the fuselage and a water rudder is attached to the air rudder post. A pair of balancer floats are carried from the tips of the lower plane.

Tanks for 52 gallons of petrol, equal to 4½ hours' run, and for oil for a corresponding period, are carried. With this amount of fuel and pilot and passenger the weight of the whole machine is 2,800 lbs. It is estimated that the speed will be 70 miles per hour.

The noticeable features are the funnel over the engine, and the big overhang of the upper plane. Any stray Short tractors may be distinguished by the fact that their funnels are vertical, and the Avro's slopes back.

The Blackburn Tractor.

Mr. Sydney Pickles' mount is a Blackburn tractor biplane fitted with twin floats. The fuselage is built on four ash longerons, cross braced with wood and surmounted by a rounded top which extends from the engine cowl to the tail, tapering from about 15 in. high forward of the pilot's seat to nothing at the end of the tail. At the front end of the fuselage is a 130-h.p. Salmson motor under a cowl which continues the lines of the domed fuselage top.

Behind the engine, mounted on the upper fuselage rails, is an oil tank of 5 gallons' capacity and a petrol tank holding 22 gallons, which is immediately ahead of the passenger's seat. Between the passenger's and pilot's seat a second petrol tank of similar capacity is fitted. At the end of the fuselage a large cambered tail plane some 10 ft. maximum span and of about 5 ft. chord is carried on top of the fuselage, surmounted by a fixed tail fin. Divided elevator flaps and a large rudder, which is partly balanced, below the fuselage complete the tail organs.

The planes are unstaggered and have spans of 50 ft. (top) and 35 ft. (bottom) and a chord of 5 ft. 9 in., giving a total lifting surface of 464 sq. ft. There are two pairs of interplane struts on each side of the body, the overhang of the upper plane being carried on diagonal steel tube struts springing from the base of the outer pairs of vertical struts. The lower plane only has a dihedral of 2½ deg. and to the upper plane balanced ailerons are fitted.

The twin floats, of Gnosspelius design, are 16 ft. long and 2 ft. 6 in. beam, and 16 ft. maximum depth, spaced 8 ft. apart. The floats have pointed noses and a straight stem. From under the stem the bottom of each float flares out to a wide V section at small step placed about 2 ft. back from the stem and from behind this step the bottom runs from this wide V to a flat just in front of the main step some 7 ft. behind the stem. From this step aft the bottom is flat, but in side elevation it runs in a slight hollow curve to the tail of the float.

The floats are carried on a float-base consisting of struts on each side. Two of these spring from the junction of the lower plane spars with the fuselage and converge to a point over the centre line of the float on that side, while the third of each set rakes forward from just behind the motor to a point about 2 ft. forward of the step. Two cross tubes run right across the bottom of these struts, tying them together, and to these cross tubes the floats are attached. A tail float is fitted but no wing tip floats are provided.

The estimated weight of the whole machine empty is 1,500 lbs. With pilot, passenger, 45 gallons of petrol and 5 gallons of oil (5 hours' supply), the weight should be 2,200 lbs., and a speed range of 45 to 75 m.p.h. is expected.

The distinguishing features of the Blackburn are the round cowl, and the rounded top to the fuselage.

The Curtiss Boats.

The machine entered by Messrs. White and Thompson, and to be flown by Mr. Loftus Bryan and Mr. Gordon England, is of the Curtiss flying-boat type. The hull is some 32 ft. long with 4 ft. 3 in. beam, and a little over 4 ft. maximum depth, of porpoise-like form, and is fitted with one step about 10 ft. from the bows. The pilot and passenger sit side by side some 8 ft. from the bows and just in front of the main planes. These are of 40 ft. span on the lower plane and 52 ft. the upper, and 5 ft. 6 in. chord, giving 500 sq. ft. of surface, not staggered, and fitted with balanced ailerons on the upper plane only. Each lower wing tip is fitted with a balancer float.

Four feet from the centre line on each side, and somewhat above midway between planes, a special set of struts from the wing spars support the bearers for a pair of Curtiss O.X. 90 h.p. motors, each driving a 3-bladed propeller of adjustable pitch.

The wings are of R.A.F. 6 section, and are loaded to 6 lbs. per sq. ft. The rearward prolongation of the hull carries the tail, which consists of a fixed plane of 17 ft span and 3 ft. 6 in. chord, with the usual elevator flaps attached thereto. These surfaces are supported some 2 ft. 3 in. above the hull on struts. There is also a very large fixed fin and a balanced rudder. Empty, the boat weighs 2,000 lbs., with 90 galls. petrol (6 hrs.), pilot and passenger, 3,000 lbs.

The Curtiss boat to be flown by Captain Bass differs from that to be flown by Mr. Loftus Bryan in that it is distinctly smaller, has only one motor and propeller, and that the nose of the float is rather more pointed. The general arrangement of the parts is similar—except that the motor, which is an Austro-Daimler of 120 h.p., is on the centre line.

The boat is 27 ft. 6 in. overall, 2 ft. 4 in. beam, and 3 ft. 3 in. maximum depth. Pilot and passenger are again side by side in front of the planes, which have a span of 45 ft. top and 34 ft. bottom, both of 5 ft. 6 in. chord, giving 400 sq. ft. of surface with three rows of interplane struts a side. Ailerons are again fitted to the top plane only. The tail arrangements are similar to those of the larger Curtiss boat, the span of the tail plane being reduced to 12 ft. in this case. The fixed fin is relatively larger in this boat than in its larger sister, extending forward nearly to the trailing edge of the main planes. The machine weighs, empty, 1,600 lbs., and with full load 2,400 lbs. Her petrol capacity is 60 galls. (6 hours).

The two Curtiss flying boats may be recognised by the boat bodies which are prolonged backwards to carry the tail planes. That flown by Mr. Loftus Bryan can be distinguished from that flown by Capt. Bass by the presence of two motors, one on each side, between the planes, in the former case, and of one central motor in the latter.

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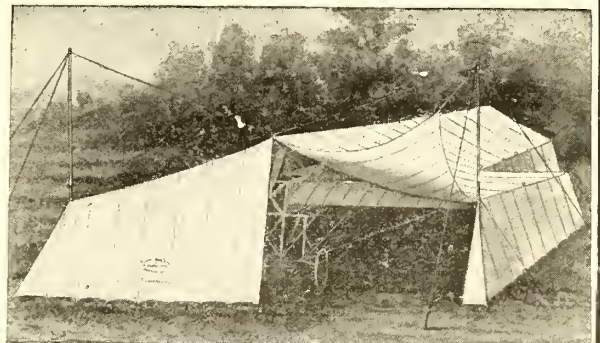
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The Engines of the Seaplane Circuit.

The Sopwith Tractor Seaplane is fitted with a British-built Monosoupape Gnome engine of 100 h.p., which is of course a radial-rotary. This engine has nine cylinders of 110 mm. bore by 150 mm. stroke, and, as its name implies, there is only one valve to each cylinder, the petrol being introduced into the crankcase through a jet, where it mixes with a small quantity of air drawn through the hollow nose of the propeller-shaft. The rich mixture thus formed is drawn into the combustion heads through ports in the cylinder walls, where it mixes with air introduced through the exhaust valves, which are kept open over the commencement of the suction stroke. This engine gives full power at 1,200 r.p.m.

The Beardmore Seaplane is naturally equipped with a Beardmore-Austro-Daimler water-cooled engine of 120 h.p. This is a 6-cylinder vertical, stationary motor, 130 mm. bore and 175 mm. stroke. The net weight is 525 lbs., and 128 h.p. is obtained at 1,200 revs. The petrol consumption is stated to be .6 pints per h.p.-hour, and of oil .025 pints per h.p.-hour.

The Sopwith Bat-boat is fitted with a Sunbeam water-cooled engine of 225 h.p. This is a 12-cylinder engine of 90 mm. by 150 mm. bore and stroke, the cylinders being set in two rows of six in "V" form at 60 deg., each row consisting of two blocks of three cast together, with electro-deposited water jackets. The valves are of the side-by-side type, and are all operated through push-rods by a central cam-shaft. The crankcase is of cast aluminium. Each side of the engine has its own carburettor, and two magnetos on a cross-shaft are carried at the back end of the crankcase. A very large oil sump is incorporated in the crankcase, into the end of which a 2 to 1 reduction gear is built. Full power is obtained at 2,000 r.p.m. of the motor or 1,000 r.p.m. of the propeller. The weight of the plant is 350 lbs.

The Grahame-White Seaplane is fitted with a Monosoupape Gnome of 100 h.p. similar to that in the Sopwith.

The E.A.C. Seaplane carries a Green engine of 100 h.p. This is a 6-cylinder, vertical, water-cooled motor of 140 mm. by 152 mm. bore and stroke. The cylinders are of steel, and are cast separately, each being bolted through the aluminium crankcase in such a way that the bolts carry the crankshaft bearings. The water-jackets are of spun copper. All valves are vertical, and are operated by an overhead camshaft driven through bevels and a vertical shaft. Full power is obtained at 1,200 r.p.m.

The smaller Curtiss Flying Boat is fitted with a Beardmore-Austro-Daimler engine of 120 h.p., exactly similar to that fitted in the Beardmore seaplane.

The Avro Seaplane is fitted with a Sunbeam engine of 150 h.p., with the exception that there are only eight cylinders, cast in two blocks of four, which are set at 90 degrees, with magnetos between the cylinder rows; this engine is similar in arrangement, cylinder dimensions, etc., to the 225 h.p. motor.

The Blackburn Tractor Seaplane is fitted with a Salmson radial water-cooled motor of 130 h.p., built by the Dudbridge Iron Works. This engine has 9 cylinders, 120 mm. by 140 mm. bore and stroke, fitted with spun copper water-jackets. Full power is given at 1,250 r.p.m.

The larger Curtiss Flying Boat is fitted with two Austin-Curtiss water-cooled motors, each of 90 h.p. These are 8-cylinder "V" engines, with steel cylinders and overhead valves. From similar engines of American make 106 h.p. has been obtained at 1,800 r.p.m., though 90 h.p. at 1,250-1,350 r.p.m. is more normal. The weight of each engine is 310 lbs.—W.L.W.

Aviators and the Crisis.

The Royal Aero Club has issued the following statement, signed by Lord Tullibardine, Chairman of the Club:—

"Owing to the grave state of affairs on the Continent, it is possible that the British Empire may be involved in a European war. In such an event, the assistance of every able-bodied man might be required. It is felt that no class of the community could be of more use to the Naval and Military Authorities than the 'flying men.' The Royal Aero Club desires, therefore, to draw up a list of those aviators who, in the event of grave national emergency, might be prepared to offer their services; and such aviators are asked to forward their names and addresses and particulars of aeroplane owned (if any) to the Royal Aero Club, 166, Piccadilly, London, W. Such a list would not be regarded as official or binding upon anyone, but would be retained in the Club so that the information would be readily available in case of emergency."

The North Sea Crossed.

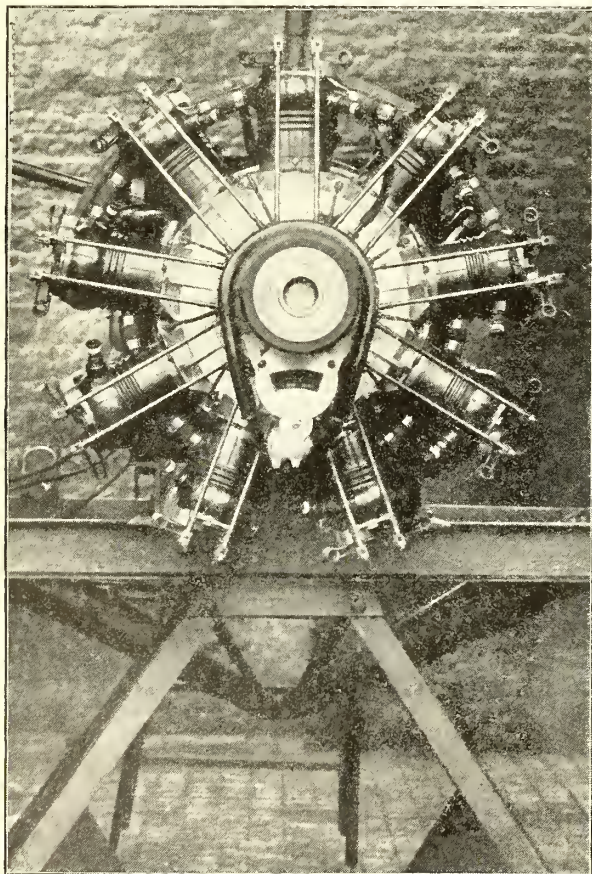
After waiting patiently for about a month Lieut. Gran, late of the Norwegian Navy, has accomplished the flight to Norway.

On Thursday morning he received news from Norway that the conditions were favourable, and at eight o'clock he started off from Cruden Bay. He had only gone 20 miles off land when he encountered a dense black fog which made further progress impossible. Returning to the land he waited until one o'clock, when he started off again, and had a great send off.

He reached Klep, near Stavanger, in 4 hours and 10 mins., thus having flown the 320 miles at a speed of 76 m.p.h. This is claimed to be the longest distance flown out of sight of land on record. The journey was uneventful, but the pilot admits extreme anxiety during the last hour. However, he managed to steer an excellent course, and duly sighted the snow-covered mountains of Norway. He eventually landed on the shore of an inland lake.

The Latest R.A.F. Scout.

The R.A.F.'s latest scout, presumably, "S.E.3," is reported to give remarkable results. Fitted with a 160-h.p. Gnome, a speed of over 120 m.p.h. has been reached, with a landing speed somewhere near 50 m.p.h., and her gliding angle is said to be better than 1 in 11. The machine is a tractor biplane with a very completely stream-lined body, and provided with only one interplane strut on each side of the body, the strut being supported by steel brackets from both front and rear spars, somewhat on the principle first introduced at the last Aero Show by Mr. A. V. Roe.



The 130 h.p. British Salmson motor for the Blackburn seaplane, running at full load on the test bench at the Dudbridge Ironworks.

Naval and Military Aeronautics.

GREAT BRITAIN.

NAVAL.

The following appointment was made at the Admiralty on July 28th:—H. C. Fuller has been entered as probationary flight sub-lieutenant and appointed to the "Pembroke," additional, for Farnborough Naval Air Station, to date July 25th.

The following appointments were made at the Admiralty on Saturday:—E. V. S. Wilberforce, A. R. Arnold, P. L. Holmes, J. D. Maude, L. Gresley, J. P. Wilson, E. R. Whitehouse, and H. Stewart appointed probationary flight sub-lieutenants, R.N., and appointed to the "Pembroke," additional, for course of instruction at the Central Flying School, to date August 1st.

* * *

At Eastchurch during this week there has been great activity among the Naval pilots, but for obvious reasons no particulars are available.

* * *

Flying was resumed at Dundee on Monday, although the three Short machines have not yet been returned from Calshot. The only machines there were a 80 Gnome Short with a land chassis, and an 80 Borel seaplane. The Short was taken out and Major Gordon, accompanied by Capt. Kilner, flew to St. Andrews overland, being away about forty-five minutes.

Major Gordon then took aboard Capt. Loughbrough of the Forth and Clyde R.G.A., and went to Buddon Camp, where they stopped an hour. On their return to Carolina Port Capt. Kilner took charge of the machine and flew it over Buddon Camp, but did not make a landing.

On Tuesday afternoon both Major Gordon and Capt. Kilner made flights alone to Buddon on the Short, and afterwards both officers alighted at the camp. From there Major Gordon made two passenger flights accompanied by Lieut. Shepard and Lieut.-Col. Macfarlane.

Capt. Kilner then took Capt. Weir for a flight, after which Major Gordon took Corporal Gordon for a flight. The pilots then flew back to the base, having been away for over two hours.

This was practically all the flying done, as orders were received later to prepare for mobilisation. The two Bessonneau hangars were dismantled and packed off, and the men stand in readiness to move.

* * *

It is reported that on July 29th Flight Lieut. R. Bone, R.N.A.S., was flying a H. Farman seaplane (120-h.p. Gnome) from Calshot to Isle of Grain, carrying a passenger, when his engine stopped at 650 ft. and he failed to alight in the academic manner, with the result that the machine capsized. Lieut. Bone was slightly bruised, but otherwise uninjured.

On Thursday of last week Flight-Commander Bigsworth on Seaplane 126 (160 Gnome), the Short gun-carrier, called at Eastbourne waterplane station en route from Calshot, with a broken exhaust valve. After repairs he left eastwards.

* * *

Flight-commander Travers flew to Bognor on the Sopwith tractor (100 h.p. Green), and had to remain there over the week-end owing to engine trouble.

MILITARY.

The usual summer course of instruction at the Central Flying School has now been terminated, and instead of the School closing for a summer vacation, officers have been called up for a new course which is starting at once.

A number of pilots of known ability who applied some time ago for the R.F.C. Military Wing have been attached to squadrons without passing through the Central Flying School, and the various officers of the Flying Corps Reserve have been called up and attached to various squadrons.

* * *

No. 2 Squadron at Montrose has been working at top speed during the past week, and flying every morning and evening.

Instructional flights on the Maurice Farman to N.C.O.'s took place every morning between 4 and 5, and the other flights were only tests of the overhauled machines.

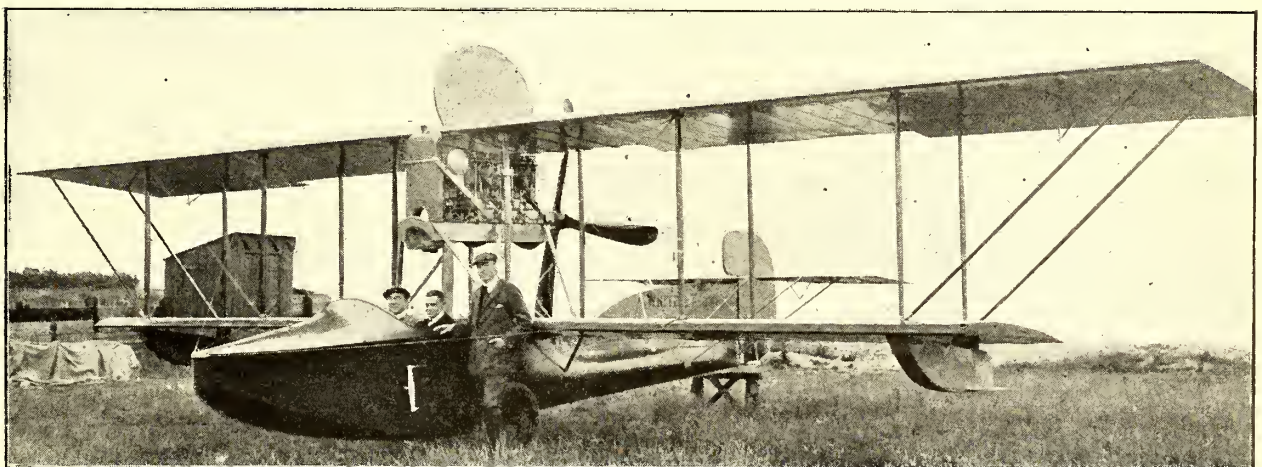
On Thursday orders for mobilisation were received, and after that the mechanics were working practically day and night.

On Saturday evening the machines were ready to move, and all went through the test flights, 9 B.E.s and 1 Maurice Farman being up.

Parties of mechanics have left for Farnborough and Scarborough to make ready for the south flight again, and the same pilots will go back.

* * *

A rough estimate of the number of aeroplanes available for the use of the R.F.C. Military Wing on active service puts the number at somewhere about 100. During the concentration at Salisbury Plain it was never possible to put more than 30 serviceable machines into the air at one time. By bringing in all the machines of modern type at the Central Flying School, and those recently delivered to the Royal Aircraft Factory and to the A.I.D. at Farnborough, and putting the latter through their tests for the Military Wing as quickly as possible, it might be possible to raise this number to about 75, and it should also be possible to raise a matter of another 25 or 30 machines from among those owned by civilian aviators and aeroplane firms. Fortunately, however, several firms are now in full running order, and can produce aeroplanes in reasonably quick time. We are now beginning to see the result of past policy.



The Curtiss Flying Boat (120 Beardmore Austro-Daimler) built by Messrs. White and Thompson, Ltd., for the Seaplane Circuit.

It is reported on the authority of a constructor who has been in touch with the War Office that in the event of the War Office commandeering aeroplanes belonging to civilians, the purchase price will not be fixed at once, but that the machines will be taken over and a receipt given for them, the price to be fixed later on by arbitration.

* * *

Mr. Norman Spratt (2nd Lieut. Royal Flying Corps Reserve), and formerly chief test pilot at the Royal Aircraft Factory, has left that establishment and accepted a post with a big firm of aeroplane constructors, which post he will doubtless take up when the Reserve is again demobilised. Mr. Spratt is to be congratulated on the change. Apropos of Mr. Spratt, it is somewhat peculiar that his height record of somewhere in the neighbourhood of 18,000 feet has not yet been passed. It was given out by certain persons connected with the R.A.F. that instructions had been issued by the War Office that Mr. Spratt's barographs were not to be tested by the N.P.L., and that no claim was to be sent in for the record, as it was desired that officers of the Royal Flying Corps should go for the existing record of only some 15,000 feet. Naturally the officers of the R.F.C. were very indignant that such action should be taken, as it obviously reflected on their ability and sportsmanship, and, equally naturally, when one came to investigate the matter, one found that the report from the R.A.F. was absolutely untrue. Nevertheless, the fact remains that the barographs have been withheld, and Mr. Spratt has been unable to claim the record. The precise reason for withholding the barographs is somewhat difficult to explain.

* * *

A marriage has been arranged, and will take place shortly, between Donald S. Lewis, Royal Flying Corps, youngest son of Captain Lewis, The Red House, Guildford, and Margaret, elder daughter of Philip Williams, The Malt House, West Woodhay, Newbury, late of Eton College.

FRANCE.

On July 27th Lieut. Valensi, of the French navy, was killed at Juvisy. He was flying a Deperdussin seaplane over the Seine at a height of 650 ft. when the machine was struck by a squall and did a spiral nose-dive to the ground, striking the ground 50 yards from the river. The unfortunate pilot received fatal injuries. Lieut. Valensi was one of the most experienced pilots of the French navy.

On July 29th eleven Henri and Maurice Farman biplanes were received at Buc by Capt. Destouches. These machines were tested by MM. Fourny, Chevilliard, and Bill. The Henris were fitted with 80-h.p. Le Rhone motors.

According to a telegram from Nancy a German Zeppelin was encountered near Toul by M. Garros. M. Garros is said to have rammed the dirigible and destroyed it, and to have lost his own life. Confirmation of the story is not obtained.

Although France possesses an enormous number of highly skilled aviators, the French flying corps cannot compare for a moment with that of Germany. France has a less number of machines, and a large proportion of them are very badly kept and are in a condition dangerous to fly. Unfortunately, also, "graft" has entered deleteriously into the equipment of the French flying corps.

GERMANY.

The latest reports on quite reliable authority from Germany place the total number of modern aeroplanes, apart from old school machines, available in that country for active service at 1,300. For some months the Mercedes firm has been turning out between 130 and 140 six-cylinder 100-h.p. motors every month, and the Benz firm has been turning out approximately half that number. In addition various other engine firms such as the Argus and N.A.C. have been turning out smaller quantities, so that the actual output of German aero engines for the past four months cannot well have been less than 250 engines per month. The various aeroplane firms capable of turning out really good machines, such as the Albatros, D. F. W., Aviatik, Rumpler and L.V.G. have been making aeroplanes at a rate which seems almost impossible in this

country, so that the estimate of 1,300 machines ready for war may be accepted as quite reasonable. The number of pilots is probably less than the number of machines, and the German list of aviators' certificates is no guide to their numbers, as the majority of German military aviators pass the military tests, and not the test of the German Aero Club.

As far as can be computed, the German airship fleet is comprised as follows:—

1. L. Z-IX (Z-II), 1911, military, stationed at Cologne.
2. L. Z-XI ("Viktoria-Luise"), 1911-1912, civil, stationed at Frankfurt.
3. L. Z-XII (Z-III), 1912, military, stationed at Metz.
4. L. Z-XIII ("Hansa"), 1912, civil, stationed at Potsdam.
5. L. Z-XVI (Z-IV), 1913, military.
6. L. Z-XVII ("Sachsen"), 1913, civil, stationed at Potsdam.
7. L. Z-XX (Z-V), 1913, military.
8. L. Z-XXI (Z-VI), 1913, military.
9. L. Z-XXII (Z-VII), 1914, military.
10. L. Z-XXIII (Z-VIII), 1914, military.
11. L. Z-XXIV (L-I), 1914, naval.
12. L. Z-XXV (Z-IX), 1914, military.

On July 31st Z-VIII travelled from Posen to Johannisthal.

AUSTRIA.

According to "L'Aero," Austria possesses some 100 military aeroplanes, which are disposed in escadrilles of five at Wiener-Neustadt, Fischamend, Goertz, Goriziani, Buda Pesth, Sarajevo and Mostar. These consist of Lohner "arrow" biplanes and Erich-Taube monoplanes. All are fitted with 120-h.p. Austro-Daimler engines. The navy possesses a few seaplanes of the flying-boat type, including two Curtiss and five Leveque machines. There are also three airships of small size.

On July 30th Capt. Miller, Chief of the Vienna-Neustadt station, travelling to the seat of war in a motor, was killed in an accident to that vehicle.

Two Aviatik biplanes exhibited at the Berne Exhibition have been removed by the manufacturers and sent to Austria. The Austro-Hungarian Government has just ordered 40 Aviatik biplanes at Mülhausen, and 12 have already been delivered.

RUSSIA.

There is very little reliable information as to the strength of Russia's aerial forces. It is known, however, that Blériot and Deperdussin monoplanes have been delivered in large numbers, and that Nieuports have been built there in quantities. There are, in addition, a certain number of Russian builders, of whom the best known is Sikorsky. Probably Russia owns, all told, some 300 aeroplanes. Russia has no effective airships.

On July 24th Capt. Nesteroff, the first of all loopers, left Moscow at 4 a.m. on a Morane-Saulnier monoplane and flew to Thoso in four hours and a half—a distance of 375 miles. After picking up petrol he started off again and reached Petersburg at 9.30 a.m.

ITALY.

Italy's air fleet is fairly comprehensive. She has four Government-built airships, M. 1, M. 2, M. 3, and M. 4, each of 420,000 c.f. capacity, with two 250-h.p. engines and a speed of 44 m.p.h., a range of action of 12 hours at full speed and of 22 hours at reduced speed, a climbing power of 6,500 ft. and a useful load of 8,400 lbs.

There is also a Parseval of 350,000 c. f. capacity with two 180-h.p. Maybach motors, a speed of 44 m.p.h. and a useful load of 6,200 lbs. for a 20-hour journey. This ship was constructed in 1912. There is a similar one built this year which is somewhat faster.

V. 1 is the first of the new Veloce (speed) type of 520,500 c. f. capacity, with two 180-h.p. Maybach motors, a range of action of 15 hours at 56 m.p.h.

G. 1, a large ship built by the "Battaglione Specialisti," is under construction at Braccinano. She will be an enormous craft of 1,400,000 c. f. capacity, with 1,200 h.p. and an estimated speed of some 50 m.p.h. The Forlanini "City of Milan" is undergoing reconstruction. Of course, these last two cannot be reckoned in the available war fleet. In addition to these are three small non-rigids of 165,000 c. f. with 160 h.p., a speed of 37 m.p.h., which carry a useful load of 3,300 lbs. for twelve hours.

In addition to her airship fleet, Italy possesses 25 escadrilles of aeroplanes at home and three in Lybia. These escadrilles each consist of seven machines, of which three are spares. The

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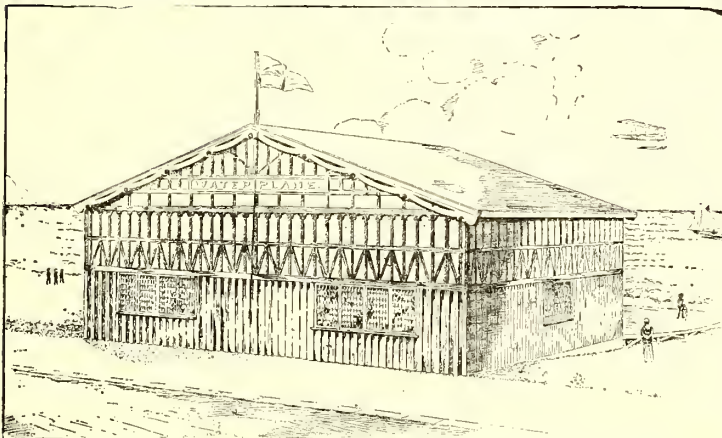
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light escadrilles possess Blériot-S.I.T. and Nieuport-Macchi monoplanes. There are also various Bristol, Deperdussin, Etrich, Hanriot and Caproni monoplanes, several of which are survivors of the Turco-Italian War. The heavy escadrilles consist of Bréguets and Henri and Maurice Farmans. Italy has something like 200 machines in all, of which perhaps some 130 machines are fit for active service. There are about 200 military pilots.

The navy possesses two escadrilles at Venice, consisting of Curtiss waterplanes, a Curtiss boat, and some Borel seaplanes. An escadrille of Bréguet seaplanes is stationed at Spezzia and one at Naples. There are also several Bossi flying-boats, probably stationed at Venice.

On July 28th M. Derome, who had already successfully delivered three Bréguet seaplanes to the Italian navy, passed a fourth machine at Venice. This is a rigid-winged machine with a 130-h.p. Salmson engine. Wireless apparatus is carried and messages dispatched while in the air were received 100 miles away. The wireless apparatus was made by la Société Française Radio-électrique, and is of 750 watts. The total length of the aërials is 650 ft.

SERVIA.

Servia has about a score of monoplanes and biplanes of French construction, chiefly Blériots and Farmans.

TURKEY.

Lieut. Midhat was seriously injured at Constantinople on July 23rd. He was starting to fly to Safrakeui and made a very steep turn, with the result that the machine performed a "chute de côte." Midhat Bey foolishly abandoned the controls and clung to the fuselage, and the machine, uncontrolled, flattened itself out effectively on the ground. The pilot was sorted out from the wreck in an unconscious condition.

GREECE.

On Thursday, July 14th, at Eleusis, Rear-Admiral Mark Kerr, R.N. (Vice-Admiral in the Greek Navy), the head of the British Naval Mission to Greece, passed the tests for his pilot's certificate on a Sopwith seaplane (100-h.p. Anzani), after verbal instruction from Lt. Collyns P. Pizey, 3 passenger flights and three flights alone. Admiral Kerr has thereby gained a whole list of aviatric distinctions, being the first pilot to take his brevet in Greece, the first British admiral to take his brevet, the first British officer of substantive General rank to take his brevet, the only admiral (except Prince Henry of Prussia, who is a courtesy admiral) who is a qualified pilot, the oldest officer in any service to take his brevet, and one of the oldest people who have ever qualified as an aviator. By thus becoming a certificated pilot Admiral Kerr set a fine example of sportsmanship to the rising generation. Throughout his long and useful career in the Service he has been noted as a sportsman, being a fine horseman, and a noted polo player, besides winning many competitions in all branches of athletics.

The Greek naval officers at the flying school have not so far attained their brevets, and one of them has severely damaged one of the school seaplanes.

Foreign Notes.

France.

On July 21st M. Chanteloup flew from La Rochelle to Cherbourg on a Caudron biplane, in order to fulfil an exhibition engagement. The distance as the crow flies is 270 miles.

The Goupy-Denhaut firm have just produced a new flying boat of 100 h.p. which MM. Denhaut and Amerigo have tested at Triel on the Seine. The machine will carry a load of 1,100 lbs., and "unsticks" from the water in 55 yards with all on board. Her speed is 81 miles per hour. All of which sounds very nice till one thinks of punching her through an 8-foot sea in the Channel.

Experiments have been made at Buc with pigeons to discover their value as messengers from aeroplanes. The chief pilot of the Blériot school took up a basket full of pigeons in the passenger-seat of a tandem machine and released them at an altitude of 5,000 ft. This was done at 10 a.m., and by 6 p.m. the first two pigeons had reached home at Agen.

Germany.

Basser's Balkan flight deserves more than passing mention. In 18 hrs. 12 mins., distributed over four days, he flew from

Berlin to Constantinople via Budapest, Sofia, and Bucharest (2,180 kilometres), accompanied by Dr. Elias. His machine was the Rumpler biplane (Mercedès motor) used for his 18-hour duration record. Landings were effected only according to the itinerary, at Budapest, Sofia, Bucharest, and Constantinople, and the Balkan ranges were crossed en route. Basser gave demonstrations at each stage to the military authorities. His final stage to Constantinople took 3 hrs. 16 mins. Contrast the flight of Basser and those of Vedrines and other French pilots last year, who spent weeks in attempting to cross the Balkans.

Another fine performance was that of Wieland last week, who on an Albatros biplane (100-h.p. Benz) flew from Johannisthal to Copenhagen, non-stop, in 3 hrs. and 3 mins. From there he flew to Stockholm, 600 kilometres, in 4 hrs. 20 mins. with a Danish passenger.

The extraordinary silence of the new Zeppelin, which cannot be heard even at moderate heights, is due mainly to the exhaust boxes fitted to the motors. Eye-witnesses of L.Z. 25 in flight all declare it would have passed unheard had they not occasion to glance overhead.

Two French pilots on two separate machines landed at Cannstatt on July 25th. Investigation of their papers having satisfied the police that they were not military men, they were permitted to depart.

Count Zeppelin's oldest airship captain, Herr Georg Hacken, completed his 700th dirigible ascent last week. His record stands at 85,000 kilometres and a net flying time of 1,728 hours.

A recent visitor to Germany writes:—

A visit to Johannisthal disclosed a wonderful state of activity. Apparently there are never less than ten machines in the air at once, and in one ordinary evening's flying we noticed 17 up at a time. Considering the numbers it is not surprising that accidents are frequent. The aerodrome management has an elaborate system of starting the machines off one after another, which is a decided improvement on the haphazard method at all British aerodromes. All beginners, until they have reached a certain state of efficiency, are compelled to fly with a red flag on their tails, much as one decorates a kicking hunter. Apparently more than half of the pupils at Johannisthal use monoplanes of the "Taube," or pigeon, type generally of Rumpler make. The rest were tractor biplanes and only one box-kite was to be seen. Every machine was fitted with a land brake in the form of a plough or reversed sprag on the tail.

On the whole it is only too evident that Germany is tackling the aviation problem very much more thoroughly than we are doing in this country. This is entirely thanks to the support given to civilian aerodromes and competitions, and to orders for machines given to independent constructors by the German War Office.

Italy.

On July 27th, Sig. Landini, flying a Gabardini monoplane (50-h.p. Le Rhone), and carrying a passenger, flew from Turin to Viège in Switzerland, having crossed the Alps over the summit of Monte Rosa.

On July 28th, Sig. Caviggia was killed at Novarre while flying with a passenger on a monoplane.

Austria.

It is stated that during the bombardment of Belgrade an Austrian military aeroplane flew over the city to observe the effect of shell fire and flew back to the Austrian lines to correct the aiming.

Spain.

It is reported that Sig. Adaro was making a cross-country flight from Aranda-de-Duero when his machine fell upon a cartload of peasants, killing a child and severely injuring seven other persons. The aviator himself was severely injured.

Australia.

On July 24th M. Guillaux established an Australian record by flying for two hours with two passengers at Sydney on Mr. Hordern's Maurice Farman waterplane.

Later M. Guillaux flew from Bendigo to Ballarat on his Blériot, a distance of 97 miles, in 55 mins. He carried a passenger.

The Week's Work.

Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Brooklands ...	—	—	—	—	—	—	—
Calshot ...	—	—	—	—	—	—	—
Eastbourne ...	Windy	Fine	Wind	Mist	Wind	Wind	Calm
Eastchurch ...	Show'y	Fine	Wind	Wind	Wind	Fine	Fine
Hendon ...	Fair	Fair	Fair	Windy	Fair	Windy	Gusty
Liverpool ...	—	—	—	—	—	—	—
(Waterloo) ...	Fair	Fair	Fair	Fine	Wind	Wind	Rain

August Holiday Flying at Hendon.

On Saturday (the Ninth Hendon Meeting) the afternoon opened with heavy weather. The first out was Mr. Birchenough on the Maurice Farman, who had a rather bumpy time of it. Soon afterwards Mr. Lillywhite went up on the Grahame-White School biplane, on which he performed some weird antics, on occasion making "one mile ahead and three to windward." Mr. Brock made a very high flight with a passenger on No. 6 Morane, and Mr. Prosser made a flight of some length on his 60-h.p. Caudron, which he flies with skill. After Mr. Noel had carried a passenger or so, a cross-country race to Bittacy Hill was held in heavy rain, Mr. Noel (80-h.p. Morane) winning, with Mr. Brock (80-h.p. Morane) second, and Mr. Lillywhite (Grahame-White biplane) third. Mr. Birchenough (Maurice Farman), Mr. Carr (80-h.p. Morane), and Mr. Prosser (60-h.p. Caudron) also flew. Mr. Prosser apparently made a very good course, and was obviously severely over-handicapped. It is naturally difficult to handicap visitors with any accuracy; but if they were given the benefit of the doubt at times, the knowledge that strangers did win races would probably bring more visitors to the aerodrome from Brooklands and elsewhere.

On Sunday the principal feature was Mr. Brock's fine flight to 6,500 feet on his 80-h.p. Morane. Mr. Carr also flew a Morane. Mr. Birchenough took passengers on the G.W. Maurice Farman, and Mr. Lillywhite evolved on the school biplane.

On Monday (Bank Holiday) the wind was strong and very changeable. The first out was Mr. Noel, who flew the renovated wide-span Henri Farman (80-h.p. Le Rhone), with two passengers, soon after noon. Mr. Lillywhite performed a variety of antics on the school biplane, and as, owing to war rumours, pilots were forbidden to fly more than three miles from Hendon, Mr. Brock took it out in vertical travelling and reached 10,500 feet.

The first competition was that of bomb-dropping. Mr. Lillywhite, on the school biplane, averaged 12 yards. Mr. F. D. Dunn, on the same machine, also averaged 12 yards. Mr. Noel, on the Henri Farman, who flew over the target at something like 1,000 feet, averaged 49 yards. Mr. Barrs, on the school biplane, averaged 14 yards. Messrs. Lillywhite and Dunn thereupon each had another shot, but they apparently tied once more, and the prize was divided.

The cross-country handicap to Bittacy Hill and back three times was won by Mr. Lillywhite on the school biplane. Mr. Brock, on an 80-h.p. Morane lost count, and went round a fourth time, with Mr. Noel, also on an 80-h.p. Morane, chasing his tail with great vigour.

Messrs. Brock, Noel, and Lillywhite took part in the speed contest, Mr. Noel changing from the Morane to the Henri Farman, as he had shaken up the former machine in landing after the cross-country race. Mr. Brock flew with great skill, and won by a long lead, having covered six laps of the course at a speed of 73.75 m.p.h.—an aerodrome record.

This is Mr. Brock's last flight in England, for he sails to-day (Wednesday) for the U.S.A., where he intends to do something in the aeroplane building line. His many friends will wish him all the good luck he deserves.

Mr. Noel, the previous "recordman" of the Aerodrome, attempted to beat Mr. Brock's time on the same machine, but he took four seconds longer for the six laps.

During the afternoon, M. Salmel, on the "Daily Mail's" Blériot, flew into the Aerodrome, having travelled from Monmouth, apparently, in defiance of all law and order. A few minutes later, M. Verrier hove in sight from the north, having flown from Coventry with official permission. He landed in

his usual majestic manner, and was duly interviewed by the police—apparently with satisfactory results. No sooner was he down than Mr. Birchenough flew in from Leighton Buzzard—also on a Maurice Farman. He reported his exhibition there ruined by heavy rain.

A sixteen-mile cross-country race is down for Saturday next, August 8th, for the Hendon Cup. Demonstrations of looping will also take place.

Flying at Bognor.

Messrs. White and Thompson's race boat, No. 6, with Beardmore Austro-Daimler 120-h.p. engine, was out on test on Friday morning. With Mr. Whitehouse as pilot, and Mr. Dodds as passenger, and about two hours' fuel, the boat left the water in 40 yards. She showed a good turn of speed, and the pilot let go of the controls for half-mile at a stretch.

Flying at Bath.

On Wednesday last week Mr. Goodden flew from Worcester to Bath, where he gave exhibitions on Thursday. In flying to Hendon he broke a valve near Hungerford on Sunday, and could not reach his destination in time for Monday's show.

Flying in the North.

Last Tuesday evening, Mr. W. Rowland Ding left Gosforth Park for Northallerton, carrying Mrs. and Miss Ding as passengers. Owing to darkness he was compelled to land at Willington, Co. Durham, and complete the journey the next morning. Flying at Northallerton Carnival on Thursday, Mr. Ding, owing to engine failure while making a passenger flight, was compelled to land hurriedly and turned the machine head over heels, owing to fouling some obstruction with the chassis. The machine was badly damaged, but Mr. Ding and his passenger emerged unharmed.

Flying at Eastchurch.

On Wednesday of last week, Mr. Frank McClean flew from Harty to Ramsgate on his Short seaplane (160 Gnome), accompanied by two passengers. Mr. McClean flew back on Saturday evening, and on Sunday he flew the machine to Grain and placed it at the disposal of the Royal Naval Air Service.

Flying at Brighton.

On Wednesday and Thursday of last week Mr. F. B. Fowler, of the Eastbourne Aviation Co., gave a series of exhibition and passenger flights at Brighton on his Henri Farman seaplane, despite a very choppy sea.

Flying at Liverpool.

On Thursday, Mr. Melly, of the Liverpool Aviation School, on his two-seater Blériot (60-h.p. Isaacson) flew from Waterloo to Freshfield and back at 2,000 ft., and then with Mr. Isaacson as passenger round Hightown.

On Saturday Mr. Melly made a trip to Altcar and round the "Mauretania."

Flying at Southampton.

On August Bank Holiday, Mr. Huels flew at Swaythling Park, Southampton, in a high wind before a huge holiday crowd. He accomplished many loops, and, on one occasion, flew upside down for over a mile.

School Reports.

Brooklands.—AT VICKERS SCHOOL: Instructors: Messrs. Barnwell, Elsdon, Webb. Pupils with instr. on machine: Messrs. Weir (21), and Klingenstein (10). 8's or circles alone: Mr. Klingenstein (6). Machines: Two school biplanes.

AT BRISTOL SCHOOL.—Instructors: Messrs. Jullerot, Merriam, and Stutt. Pupils with instr. on machine: Lts. Moule (11), Hewitt (12), Bagley (10), Capt. Bernard (3), Napier (2). Strts. or rolls alone: Mr. Collins (2). 8's or circles alone: Lts. Lawrence (3), Sanders (6), Collins (2), Lt. Coles (2). Certificates taken: Lts. Lawrence, Coles, and Sanders. Machines: Three Bristol biplanes.

AT BLÉRIOT SCHOOL.—Instructor: M. Jules Teulade. Pupils: Strts. alone, Messrs. G. L. Pitt (42 mins), J. P. Brooke (72), H. A. Cooper (65), J. G. Miller (25), Comte Fitz-James (15), Capt. Dowding (30), Capt. Smith Barren (5). 8's or circles: Messrs. G. L. Pitt (16), R. P. Creagh (13), A. Crick (40), H. O'Hagan (10), W. H. Treloar (100), Capt. Dowding (105), Capt. Smith Barren (20). Mr. E. Wilberforce (45). Certificate taken: Mr. A. Crick. Machines: Blériot monos (Anzani and Gnome).

Hendon.—AT GRAHAME-WHITE SCHOOL.—Instructors: Messrs. Barrs, Birchenough, and Dunn. Pupils with instr. on

machine: Messrs. Wyles, Stalker, Murphy, Strickland, Toolis, Duncan, Courtney, Lister, Hawkins, Upton, Hawkins. Strts: Messrs. Easter (new pupil) and Carabajal rolling with instr. Strts alone: Mr. Howitt. Machines: Grahame-White school machines.

AT BEATTY SCHOOL.—Instrs: Messrs. Baumann and Watts. Pupils with instr on machine: Messrs. Allen (18), Ruffy (17), Bentley (28), Roche Kelly (20), Liung (10), Travers (5), Lieuts. Maguire (6), Dickenson (36), Mr. Smith (22), Princess Ludwig of Lowensten-Wertheim (16). Machines: Wright Dual Control biplanes.

AT THE BRITISH CAUDRON SCHOOL.—Instrs: Messrs R. Desoutter and R. M. Murray. Pupils doing strts or rolls alone: Lieut. G. H. L. Mayne (new pupil), 8's or circs alone: Messrs. Abbott and Cormier. Machines: 2 Caudron biplanes (35-h.p.).

Eastbourne.—AT E.A.C. SCHOOL.—Instructors: Messrs. F. B. Fowler and Morgan. Pupils with instr on machine: Messrs. Arnold, Bass-Sutton and Hardstaffe. Machines: Two Bristol biplanes.

Liverpool (Waterloo).—AT LIVERPOOL AVIATION SCHOOL.—

Instr: Mr. H. G. Melly. Pupils doing strts or rolls alone: Messrs. Crean and Groves. Machines: Blériot monos.

Shoreham.—AT PASHLEY SCHOOL.—Instructors: Messrs. E. and C. Pashley, and B. F. Hall. Pupils with instr on machine: E. Roberts, F. Borton, C. Winchester, J. Woodhouse. 8's or circs alone: W. Mortimer. Machines: Farman and Pashley.

From "Lloyd's Weekly News."

"CUPID IN AN AÉROPLANE.—Love came to Miss Florence Crabtree, of Burton-on-Trent, through Cupid's own domain—the air—and as a sequel she was married on Thursday, at Woolston, Berkshire, to Lieut. Wingfield Smith, Army Flying School, Farnborough.

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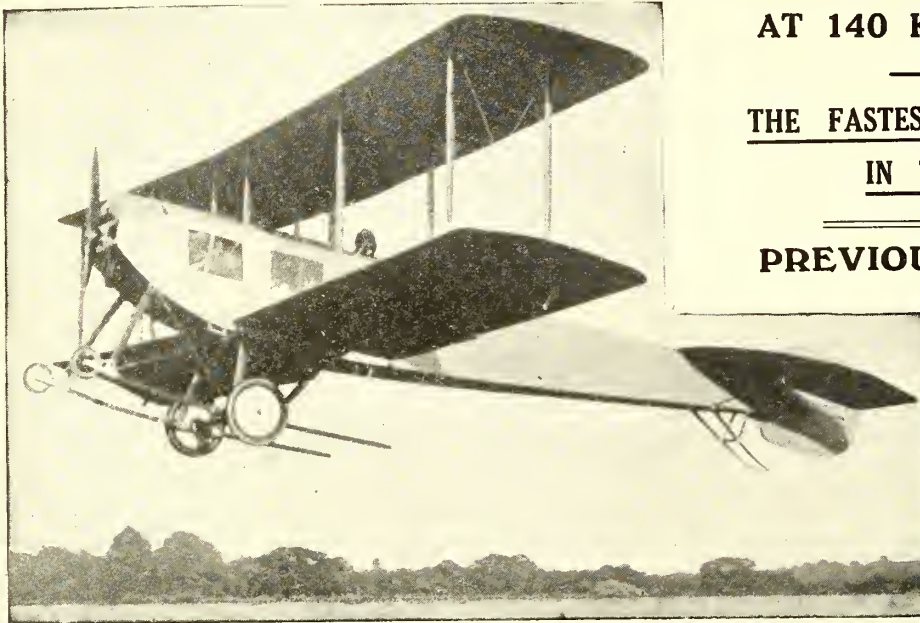
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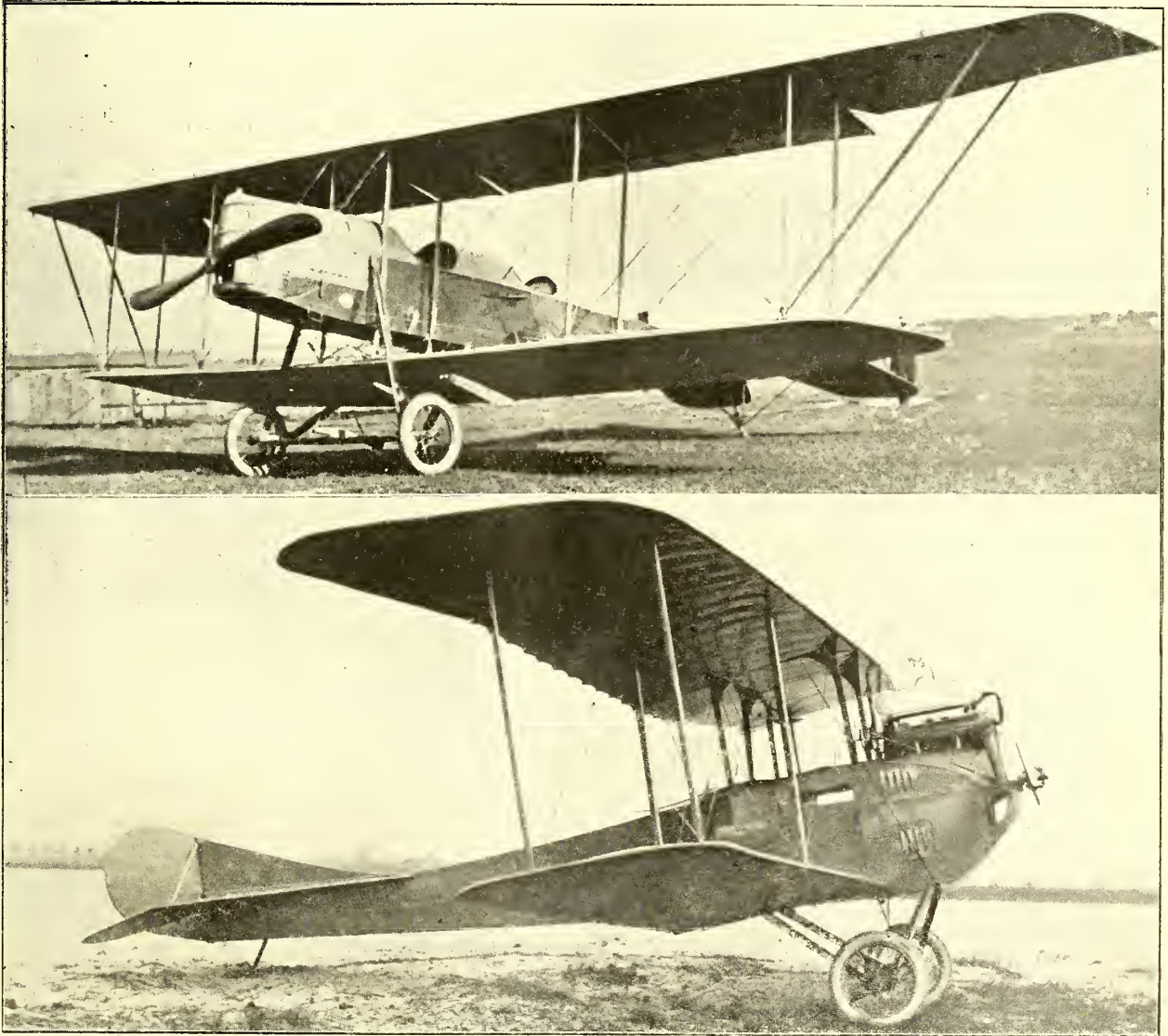
Edited by C. G. GREY. ("Aero-Amateur")

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AS A NEWSPAPER.

WEDNESDAY, AUGUST 12, 1914.

No. 7

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Aircraft and War.

Since the last issue of this paper went to press the situation has altered considerably. By way of a change it is the Englishman who "has his quarrel just," and it is the German who "gets his blow in fust," only apparently he has made the fatal mistake of punching the wrong place. Everyone who has studied the strategy of a possible war between Germany and France expected Germany to strike through Belgium and Luxemburg, and I take off my hat to the military correspondent of the "Morning Post" who several months ago gave a most lucid explanation of the whole plan, together with excellent maps of all the German railways laid for the express purpose of precisely the line now taken. The only thing that made one doubt whether the blow would be delivered as it has been was the fact that the preparation was all done so openly.

One can only assume that Germany is so sure of her strength that she calculated on getting through Belgium and the Ardennes by sheer weight, and also that she made a very bad miscalculation of Belgium's power of resistance. Also it appears that the German diplomatists made a bad mistake over this country, firstly in fancying that our hands would be tied by civil war in Ireland, forgetting that the two Irish Armies would be just as pleased to scrap with Germany as with one another, and, secondly in thinking that "perfidious Albion" is more perfidious than she really is. Great Britain's history, in the matter of treaty obligations and wars of aggression, has some fairly dirty pages, but we are not quite such fools or knaves as to be bribed by Germany into permitting the conquest of Belgium, or into leaving our French friends in the lurch. It now remains to be seen whether Germany's military leaders are as incompetent as her diplomats—let us hope so.

One wishes that our Expeditionary Force could have been got into Belgium somewhat earlier, but before condemning anybody for the delay it is necessary to know the whole of the facts—which no one outside the Headquarters Staff is ever likely to know. One can imagine plenty of reasons. Presumably we had to arrange with the French General Staff whether our troops were to go to France, or direct to Belgium. That could only be decided when it was known where Germany intended to strike. There would have been little use in pouring troops into Belgium if Germany was attacking through the Vosges, and even until the end of last week no one knew whether the attack on Liège was not a feint to draw French troops northward and weaken the defences to the southward.

Also, it was presumably necessary to clear the Channel of German warships so as to give our transports a safe passage. The sinking of the "Konigin Luise" by the "Lance" off Aldeburgh, and the sinking of the "Amphion" on one of the German mines, shows that the Germans expected our troops to cross from the Thames and from Harwich to the Belgian coast, and were laying mines on that course accordingly. Here again the Germans seem to have made an error of judgment.

Further, troops have to be moved and fed, and there would have been no sense in sending our men to Belgium or France till the Western and Northern railways had been cleared of their armies and were ready to transport ours, while at the same time carrying food supplies for all the troops. A modern army cannot live on the country as it goes along, especially when it happens to be a friendly country, and the movements of troops are purely problems in arithmetic and geometry. It

may be maddening to see one's best friend being hammered a hundred miles in front of one, but it is useless to cut off his food supplies by overcrowding troops up behind him and leaving them there to starve. When our little army gets going it has to make up by its efficiency for its small size, and it has got to go where the French most need support. We have in K. of K. probably the finest military organiser of the age, and in Sir John French and Sir James Grierson two of the finest strategists and tacticians, so we may rest assured that we shall make as few mistakes as is humanly possible.

Germany has been preparing for this war for years, and fixed on this particular moment months ago. Our Foreign Office has known it for a long time. The "Test Mobilisation" of the Fleet at Spithead a few weeks ago was simply intended as a warning to Germany,—a warning which was disregarded either through misjudgment of our honesty, or because it was too late to draw back. Austria's attack on Serbia was dictated by Germany as a convenient means of starting the conflagration. Now we are fairly in it, past all recall, and the immediate problem is how to get it over as soon as possible. It remains to be seen whether the German war machine is as perfect as its designers think. If some of the wheels stick or break there is a chance of the whole thing collapsing.

As to the rock-bottom cause of Germany's running amok in this fashion, the best opinions seem to be divided. One cause certainly seems to be that the enormous spread of Socialism in Germany, as shown at the last elections, has so scared the Prussian *junkers*, or land-owners, that the war has been forced on in the vain hope that a wave of patriotism will swamp the Socialists. It seems more than likely that a lost war will swamp the land-owners instead.

Another cause seems to be that German traders throughout the world have so overrun their financial capabilities that they have been going bankrupt by the thousand and so have broken the banks which have been backing them, with the result that the big financiers behind the banks have fostered the war-spirit so as to get their money back out of profits on armament and military equipment. In doing so they have plunged their country into a war which is more likely to prove their ruin than anything else,—and they richly deserve it.

At the moment the German people are in the delirium of war fever, so they are not pleasant to meet, and for years they have been taught to hate the English, but the individual German is an easy-going, kind-hearted individual, singularly like an Englishman in most of his ways,—especially in his quiet contempt for foreigners, and his offensive manner to strangers,—and one hopes that when this affair is over, with all its waste of life and national wealth, we shall be better friends with our Germanic relatives. Meantime, Germany, as an Empire, has to be crushed out of existence, and the sooner it is done the better.

A possibly misguided friend of mine, who is given to dealing with astrologers and second-sight experts and such persons, came across one such a while ago who produced a string of highly circumstantial prophecies concerning international developments, and ended up with the statement that the German Emperor would die a prisoner in London. So far the prophecies have worked out with astonishing accuracy, which

may be a consolation to those who believe in the possibilities of present-day prophets. After all, a prophet may be only a person with an inside knowledge of facts and a gift for following them to their logical conclusions. Quite a number of things prophesied by various writers in this paper in connection with naval and military aviation during the past three years have duly come to pass—very unfortunately in some respects—and none of us claim any unusual gift of prophecy, so there is no reason why others should not be as successful on larger issues.

Possible German Raids.

So far as Great Britain is concerned there seems no reason to fear a German invasion. In fact, we are far better off than if we had gone into a war with Germany on our own account. But there is, of course, always the chance of one or two German ships raiding the coast, after giving the slip to our fleet. Also, there is still more probability of a raid by air, either by a small squadron of German aeroplanes, or by a Zeppelin. Such a raid could have no permanent effect, but it might be undertaken in the wild hope of causing a panic among the people. London would, of course, be the objective, and whether it was momentarily useful to Germany or not depends on the temper of Londoners. Even a ton or so of explosives dropped in small instalments on London at night would have a somewhat disconcerting effect on the strongest nerves, and it is hard to judge whether it would result in a panic-stricken mob rushing to Buckingham Palace clamouring for peace, or whether mass meetings of the people would demand that every man should be enrolled and marched off to Germany. Personally I am inclined to believe in the latter result, for if one only kicks an Englishman hard enough, or manages to frighten him sufficiently, one raises quite an ugly and determined fighting spirit. Ordinarily he is too lazy or too busy shop-keeping to want to fight. It is only the Norman and Celtic population of these islands who are naturally pugnacious.

However, if a Zeppelin or some aeroplanes did come over they would probably make a nasty mess somewhere, and it is better that they should be kept away, therefore it occurs to one that something in the nature of an air patrol is necessary to protect London. As any hostile approach would necessarily be from the North or East, it is on the north-eastward side the patrol is needed. In the daytime we can, no doubt, depend on the Naval pilots at Eastchurch to keep a good look out between, say, Dover and Burnham-on-Crouch, and a few land-going machines operating from Felixstowe could extend the line from Burnham northward. Some of the slower land machines, with speeds of 55 to 66 miles an hour, would serve quite well for pure patrol work, but they would be of little use if called upon to act against modern Albatros, L.V.G., or D.F.A.V. aeroplanes, though against Zeppelins they might be quite useful.

In the matter of attacking Zeppelins, we have all heard the story, happily known to be untrue, of M. Garros ramming a German airship and dying in the attempt. Such an act would, of course, be brave, but I maintain that M. Garros, or any other pilot capable of such an act, is worth much more alive than the destruction of the Zeppelin is worth. To begin with, there are plenty of simpler ways of destroying Zeppelins, especially in view of the fact that the much-advertised gun-platforms on the roofs of the airships cannot be used. It is now fairly well admitted that the explosion which wrecked the last Zeppelin at Johannisthal and killed all her crew was caused by the firing of blank cartridge from the gun platform. Obviously any slight hydrogen leak must go upwards, so guns are now only used from the gondolas underneath. Therefore it seems that hand-grenades, of the type which gives plenty of flame, dropped on top of a Zeppelin are the most deadly form of attack. Any firework manufacturer can turn them out in a day or two, and if made with spiked noses they would stick where they struck.

Ramming a Zeppelin amidsthips is in any case fairly hopeless, for the aeroplane would be subject to a converging fire from the gondolas and would be brought down before it reached the vessel. An attack from above is in every way more sensible, for the huge gas-container masks the fire

from the gondolas, so that the aeroplane could approach quite close to drop its grenades, and would be away again before the fire took effect.

Against a night attack we have a few small slow airships which could be used as patrols, and the Astra-Torres and Parseval (Naval Airships Nos. 3 and 4) might even put up some sort of fight, though being single-gasbag affairs a few rifle bullets from a Zeppelin would put them out of action, whereas a bursting shell would be needed to bring down a Zeppelin.

If I might offer a suggestion it would be that our airships should only be used to signal the approach of hostile aircraft, and that the actual attack should be made by fast, bomb-dropping aeroplanes kept in readiness for the purpose. Such machines as single-seater Sopwith "scouts," say with 50-h.p. Gnoms, or the new 80-h.p. two-seater Bristol tractors, which are slower, but climb very fast, would be admirable for this purpose. Either could climb higher than a Zeppelin, and one may assume that they would climb much faster than any German long-distance aeroplane laden with explosives, and with sufficient petrol for a journey back from England.

It seems advisable that a certain number of such machines should be kept near enough to London to act as an aerial guard and within signalling distance of airship patrols operating between Sheerness and the City. Hendon Aerodrome, now devoid of all its crack pilots, seems to be the obvious station for such a guard, and I rather fancy it would be some consolation to nervous Londoners to know they had some protection in their immediate neighbourhood. Hendon has also the advantage that it affords a place from which an aeroplane can start safely in the dark or in any kind of weather, and, as it is most necessary for us to husband our resources, it is better to consider this point than to risk destroying machines by starting them out of a worse ground a few miles farther east.

Our Volunteer Aviators.

Civilian aviation has, of course, ceased to exist for the time being, for practically every British pilot capable of flying has volunteered for service. It is only what one expected, but the nation's thanks are none the less due to them all. The fact of their volunteering does not, of course, mean that they are all going to be accepted, for many of the volunteers have had no practice for months, or years, and some of them would be more trouble than they could possibly be worth, for above all things we want men who will not smash machines.

Anyhow, the result of the levy is that we have more pilots than machines at the moment. More machines and more engines we must have, and elsewhere Mr. Sayers has made some suggestions as to how deliveries may be accelerated. I do not propose to go over the ground he has covered, but there are two points I particularly wish to emphasise.

A Word to the Trade.

Firstly, every mechanic and every workman in every aeroplane factory must bear in mind that on every stroke of work he does there may depend not only the life of an aviator and his passenger, but what is even more valuable, the delivery to the Staff of the knowledge the aeroplane crew have acquired at the risk of their lives. It is probable that in the stress of getting machines out in a hurry the usual Government inspection will be relaxed, and so may the shop inspection. Machines may be assembled without any inspection at all, for all inspectors and other non-producers must become producers.

Every workman must henceforth consider himself his own inspector. Let each man as he does a piece of work ask himself one question, "Would I care to trust my life to this job?" I counsel every constructor and every shop foreman to impress this on his men. Try and stir up their imaginations to see that literally their own lives and those of British women and children may depend on each piece of work they do. The breaking of an aeroplane through defective or scamped work may mean not only the loss of a couple of fliers, but of information which may mean the loss of the decisive battle of the war, and the breaking of this country. Let every man make up his mind that the aeroplanes turned out without inspection shall be better built than those which have been inspected. The British aeroplane worker is now on his honour to do his best for his country.

Owing to possible lack of inspection, there may be an inclina-

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tion in some cases to use up stuff, especially B.E. parts, which have been condemned in the past by a too finicky R.A.F. inspector. If the stuff is good and sound there is no reason why it should not be used and altered to fit, but there must be no attempt at working off stuff that is known to be "dud." Every tin-clip must be fitted, every cable must be spliced, every tinctack must be driven home, as well as, and even better than, if an inspector was standing over the work. The workman building an aeroplane is working for the safety of his country as much as any soldier in the firing-line or any organiser at Headquarters.

A Word to Headquarters.

And at Headquarters, too, mistakes must be avoided, especially those mistakes due to the temptation to be too clever. We can produce flying machines. Some of our aeroplanes are among the most efficient in the world. The immediate need, especially to our small Army and big Fleet, is scouts. We want to know where the enemy is. The Navy wants to get at him, the Army wants to avoid being surprised by overwhelming numbers. We can make air-scouts, therefore let us make air-scouts. We have tried to make fighting aeroplanes, and we have done about as much in this way as has any other country, but the best of our fighting machines is still at the mercy of any fast scout armed

A Real "Entente Cordiale."

If any doubt has existed about the reality of the *entente cordiale* between this country and France it may be set at rest by the experiences of Mr. Farnall Thurstan, of the Bristol Co., last week. The Bristol Company had a number of Gnome engines on order, and, naturally, as soon as war became inevitable it was necessary to get those engines to England at once. Consequently, off went Mr. Thurstan to Paris to fetch them. He reached Paris without much difficulty, but at the Gnome works was met with the trouble that France wanted all her engines herself. Being more than a little of a diplomat he attempted no argument, but went to our Embassy in Paris, where by the interchange of a few telegrams between there and London and the French Foreign Office, it was arranged that permission should be given for the engines to leave France, for the assistance of Great Britain. Then it became evident that credentials of sorts would be necessary for use before and after the engines had left Paris, so a general letter of recommendation, "To all whom it might concern," was composed at the Embassy, a wily sailor officer assisting with the suggestion that every available official stamp should be put on the document so as to add to its importance in the eyes of minor functionaries. I have not yet had the honor of seeing that letter, but I gather that "*entente cordiale*," and "*amitié nationale*," and "*munitions de guerre*," and so forth, entered somewhat largely into its composition, and the variegated official embossments and signatures gave it the air of a patent of nobility at least, if not of an international treaty. Armed with this our friend Mr. Thurstan proceeded to pull off as good a piece of work in its own way as the war is likely to produce. The Gnome Co. were already on the right track without it, and the necessary fittings, such as magnetos and carburettors, were rushed onto the engines in record time. But the Gnome Co. are not packers, and packing cases had to be built. The Document was waved across the other side of Paris. Cases apparently grew at its bidding, and the engines were transported to the packers, to save time while the cases grew. Then they were loaded onto trucks, assisted by French officers in charge of the railway, influenced by the Document, and started for le Havre.

Mr. Thurstan and his precious convoy arrived there at 9.30 p.m. The only boat left at midnight. The town was depopulated by the mobilisation, and no transport existed. The affair seemed hopeless. Then Mr. Thurstan rang up the British Consul, who, thinking him to be merely a stranded tourist with luggage, advised him to call at the consular office. A little explanation, however, brought the Consul post-haste to the station. More explanations and an inspection of the Document followed. The Consul had a brain-wave. The Temporary Commandant of that district of Havre was a friend of his. The Commandant quickly appeared. The Document was produced again. Again it electrified proceedings.

with a hand-grenade or a sawed-off duck-gun. Therefore let us give up, for the present, all experiments with weird weapons of offence and concentrate on producing the best possible scouts. There do exist a few gun-carrying machines which seem to have possible value, and if these can be in any way made faster, so as to approach the speed of a scout, it may be good to build some more, to defend certain definite places, but what we want are scouts. Not freak experimental machines. We can go on experimenting with them when our scouts have won the war for us. Aeroplanes of offence cost more time and money to build, and when they are built one is not sure what one has got. All the time and money may have been wasted. Let us stick to what we know to be useful standard types.

By the time these notes appear our Expeditionary Force, and with it the R.F.C., may be in action. Practically all readers of this paper have friends or relatives in the Royal Naval Air Service or in the R.F.C., and on their behalf I wish our aviators on service every good fortune. The naval and military aviators, on their part, may rest assured that everything possible will be done in this country to ensure their having a plentiful supply of the best and most reliable aeroplanes on which to do their work.—C. G. G.

The Commandant dashed off, to appear in half an hour with half a dozen long Normandy wagons, six horses apiece, and an unfledged recruit with the hayseed still in his hair, as driver to each pair, artillery fashion, riding one and leading the other.

While waiting for the wagons, Mr. Thurstan had a look round the station and quite by accident discovered a pile of cases marked "Renault." Closer inspection showed some of these, obviously containing engines, were consigned to our Royal Aircraft Factory, and others were apparently parts for cars, but might have been anything. Mr. Thurstan remembered being told that certain Renaults had left Paris on the eve of war, but had not reached England. Here was treasure trove indeed.

When the wagons arrived the *piou-pious* got to work like Trojans. Gnomes, Renaults, and the odd cases also, were all loaded up, and after repeated journeys of the whole caravan were got aboard the boat, which, again with the aid of the Document, was kept waiting for the last trip. The Commandant, who, in the French phrase, "made the impossible" for the assistance of the ally of France, accompanied by our invaluable Consul, escorted Mr. Thurstan to the boat, and amid the enthusiastic cheers of the French soldiers our munitions of war started safely for England. Unfortunately the Document had to be left in the hands of the Consul to explain the unconstitutional behaviour of everyone concerned, but one hopes it will eventually be rescued and framed.

As one might expect, the worst hitch in the proceedings occurred when on arriving in England, without the Document, the convoy fell into the hands of an officious Custom House person, who, in spite of the cases being consigned to a Government department, wanted to open them all to see what was inside. However, a few well-chosen words resulted in special trucks being attached to the next train to London, and the same afternoon the whole outfit arrived safely at Farnborough. And so, thanks to Mr. Thurstan, our aerial forces, either over land or sea, will be the stronger by quite a considerable number of new aeroplanes equipped with modern engines. I think most people will agree that, in the official Roman terminology, "he has deserved well of the commonwealth."—C. G. G.

Our French Friends Depart.

By Wednesday of last week all the foreign pilots employed by British aeroplane firms had left to join their regiments in France. M. Verrier, of the Aircraft Mfg. Co., came to THE AEROPLANE office to say good-bye on Tuesday, and M. Noel, of the G.-W. Co., on Wednesday. M. Jullerot, of the Bristol Co., had left earlier in the week, and M. Teulade, of the Blériot Co., on Wednesday. M. Salmet, of the "Daily Mail" advertising department, proposed to fly to Paris on Saturday on the "Daily Mail's" Blériot, but the authorities promptly commandeered the machine. One hopes to see them all back again before long, uninjured and covered with glory.

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The Acceleration of Aircraft Production.

BY W. H. SAYERS.

To-day England finds herself at war with the greatest military Power in Europe, a Power which possesses the largest and probably the most effective air fleet in the world—and England has an air fleet which, all told, cannot exceed in numbers about 20 per cent. of that of her opponents, and may be only 10 per cent. The German air forces will probably be used mainly against our ally France during the earlier stages of the war, and this may give us the opportunity of considerably increasing our strength. But France is probably considerably inferior to Germany in air strength, and we and Russia have the surplus to count with.

Many of the British aeroplane constructors were filled up with orders before the crisis, and it may be fairly safely assumed that all of them are to-day—but in the normal course of events these orders would not be fulfilled for a period of six months at least, and in six months either all will be over, or—even the armaments industry will be paralysed. The question before us is, therefore, can we accelerate our production of aircraft, and how best may we set about it?

In the first place the possibility or otherwise of obtaining the necessary motors is a determining factor in this question, and the paucity of British motors is a distinctly discouraging fact. However, there must be quite a number of new engines of from 80 to 200-h.p. available in this country, and a further number of engines of smaller power including a multitude of 50 Gnomes in school machines which could be fitted to small single-seater machines, which would be quite fast enough for a lot of scouting work, at any rate, of the precautionary kind. While this stock of odd engines is being used up it should be possible to arrange for some of our high-class engineering works to undertake the manufacture of engines of known merit to supplement the existing makers. Thus the output of Green motors need not be restricted to the present capacity of the Green Engine Co. Beardmores should be able to turn out Austro-Daimlers at a quite useful rate within a month or so if they were properly encouraged, and the pressure of their other armaments work does not forbid extension, for the aero engines are being built by the subsidiary firm of Arrol-Johnston, well known as car builders. The Coventry Ordnance Works similarly should be able to produce Anzani motors.

Willans and Robinson, in such an emergency, could produce Salmson motors for the Dudbridge Ironworks in quite large quantities, and at high speed.

The Sunbeam Co. could certainly produce motors to great effect. The Gnome Engine Co. doubtless can arrange for a reasonable production when called on. There would probably be little difficulty in arranging with other firms, such as the Monk Engineering Co., or Alfred Herbert's, both of Coventry, having the right class of equipment and experience, to turn out either parts or complete motors of any or all of the above-named types, more especially as the motor firms are likely to be very short of their ordinary work.

Also there will be a considerable number of aeroplanes smashed whose motors may be either undamaged or easily repairable, and so even aeroplanes without motors may be useful as spares to attach to the motors of wrecked machines; while we may, of course, capture German wrecked machines with usable motors in them. It would, of course, be a trifle annoying to have a large supply of 200-h.p. Salmsons out of wrecked seaplanes, and only stand-by B.E.s to which to fit them, but for the early stages of this trouble it is better that we should have the machines ready to be fitted with motors when they are available than to have the engines kept waiting for machines—as it will almost certainly take longer to make the necessary arrangements for producing engines than it will to turn out machines.

Coming to the question of aeroplanes themselves, it is obvious that this is no time for experimentation, or for producing a variety of types, and standardisation is imperative. Firms who have already produced machines which have been accepted and found satisfactory by the military or naval authorities should be concentrated usually on turning out only their most successful and most generally useful type. Of course, it may be impossible in all cases to do this. It might be unwise to order

only "scouts" from the Sopwith firm and make them drop seaplanes for the present, though it might be possible for them to arrange to build only the scout class at their existing works and take over other works or lend one or two of their leading hands to a firm of boatbuilders who would build seaplanes to their designs at a suitable royalty—but the more one workshop can be confined to one type only the quicker and more efficiently it should be able to operate.

As regards firms not having a type of their own of recognised value, it seems obvious that they should be set to the production of one or other standard type of approved design. It seems probable that actually all such firms will be given orders for B.E.s or R.E.s, as all the necessary drawings and specifications can be issued without delay. This is neither the place nor the time to discuss the merits or demerits of their design, and there is no doubt that the B.E.s of the latest revised and strengthened type, and the R.E.s, are amongst the most useful warplanes in existence—but it is to be hoped that the authorities concerned will not insist too harshly upon an absolute adherence to all the details of the existing B.E.s.

Nothing of the high standard of excellent workmanship and material heretofore required can be relaxed, of course; but, speaking with some experience of building aeroplanes in part or in the lot, both B.E.s and others, there is no doubt whatever in the writer's mind that many of the metal parts could be simplified, strengthened and lightened by any practical "tin-clip merchant," and that welding enters in an unnecessarily large degree into the construction of many of their vital parts. Welding is not above suspicion at any time, and an undue amount thereof is a very undesirable feature in a machine that is to be rushed out as quickly as possible, so that it is to be hoped that the authorities will consent to such reasonable detail modifications as may be dictated by the exigencies of the situation, remembering that safety of construction is more important now than ever it was.

A very important factor of the position is the question of labour. The number of men who have actual experience in the construction of aeroplanes does not greatly exceed those already employed in the various works to-day, so that fresh men have to be trained for the work while the rush is going on. The simplest way out of this difficulty would seem to be to concentrate all those who have any actual experience of aeroplane building in the existing aeroplane works on actual assembling of machines, and having all repetition work, both wood and metal, made by outside firms of the boat or coach building trades for the woodwork, and by engineering firms as far as metalwork is concerned.

There will shortly be only too many such firms who will be glad to take any kind of work within their capacities, and the increased capacity of the existing works and trained staffs would be very large.

If private constructors and the authorities concerned will agree to work together on some such lines, forgetting any past differences and sacrificing their apparent immediate interests to the welfare of the State as a whole, we should be not only able to repair the inevitable wastage of our Air Fleet, but to increase it very materially during the period of the war, to the ultimate benefit of all concerned.

However the war results in the end, the effect on the prosperity of the country is bound to be enormous—and the longer the war continues the worse for everybody concerned. That air power will be a determining factor in the result is not to be expected, but that it will either accelerate the victory or reduce or defer the reverse is certain.

Quite apart from the immediate effect of aircraft in warlike operations, any industry which can organise its forces and absorb members of other trades dislocated by the effects of war is rendering a very great service indeed to the country by minimising the industrial disturbance which must ensue, so that from all points of view it is in everybody's interest that all should work together to accelerate our production—and nobody who knows the aircraft industry in this country can doubt that all its members will be ready to help to this end.

In Germany on the Eve of War.

By W. E. de B. WHITTAKER.

There are certain intentions in the life of man which are ill-omened from the first. Misfortunes dog every attempt to fulfil the desired end. Steps which in ordinary circumstances would be pleasant and simple become beset with countless difficulties. Sometimes there is a reason for ill-fortune. Trouble invariably follows any deviation from the principles of a lifetime. For anyone whose principal dislikes include Germans and indeterminate dachshunds a visit to Germany was in the nature of things certain to be of ill-omen.

I left London on the afternoon of July 25th with a friend. We intended to motor to Johannisthal on his car, a light speed model of 20-h.p., and there inspect and possibly purchase an aeroplane. From the beginning things went wrong. Misdirected by a policeman of charming manners and diabolical ingenuity we lost our way somewhere between the Bank of England and Stratford only to find it again after an hour's drive through most of the previously undiscovered parts of the East End. Then matters went well for a space, and our speed slowly increased until on the open road, some three or four miles from Chelmsford, we were travelling at about seventy miles an hour. Hereabouts, the designer of the road had laid down a small bridge spanning an infinitesimal brook or ditch. This bridge rose steeply to a point about two feet above the road level, after which it descended as steeply. My friend hardly reduced speed at all, with a result that we rose well into the air to heights variously estimated from four to ten feet. However that may be, we hit the ground again after a space with a buckled chassis, a flattened wire-wheel and some distraught shock absorbers. Thus it was necessary to spend the night in Chelmsford while the car was re-assembled and straightened. First token of the wrath of the gods. The following night we reached Harwich after an exciting drive in the dark at the end of which I made a wild attempt to put the car into the river instead of the hotel garage. On the Monday night we left England for the Hook of Holland, passing, as we sailed out, the "Amphion," then lying off the jetty.

On the Tuesday we drove through Holland, passing the Hague, Leyden, Zutphen, and Oldenzaal to the frontier at Springhiel. After an interesting argument with the Customs' officer as to the virtues of bimetalism and its bearing on the value of English gold when presented in the form of sovereigns, we passed on our way into Germany. That evening we reached Osnabruck after the wettest drive I have ever known through the worst sign-posted country in Northern Europe. For the last forty miles of the drive the rain fell in torrents mostly on us as we had no wind-screen, and had perforce to leave the hood unopened. At Osnabruck we saw the first signs of approaching calamity, though, naturally, without any idea that Great Britain would be drawn in. From information given us during dinner we gathered that though the mobilisation orders were not yet published the first line

was actually prepared for active service from the regimental dog to the last supply wagon. The streets were quiet, and the people had not as yet begun to realise all the possibilities of recent Austrian action.

On July 29th (Wednesday) it was still raining hard, and we made no move until late in the afternoon. Before leaving Osnabruck we bought a sheet of celluloid with which we improvised a wind-screen which served us quite well. I mention this because, at a later date, we regretted having ever seen or heard of that sheet of celluloid. We reached Minden early in the evening with distinctly frayed tempers, chiefly owing to my friend's total incapacity to read a route in the Continental guide, which was, in any case, quite inaccurate. We stayed the night at Minden. Here the signs of approaching war were even more pronounced. The hotel was thronged with officers and their families eating as though on the morrow they died. It is a great country.

The Thursday turned out to be one of those days designed to show erring mortals that human wishes when most reasonable do not always find fulfilment. The day was fine. The road, for the first time since our arrival in Germany, was straight and fairly good. All went well through Hanover and the Duchy of Brunswick. Magdeburg, where a toll of about 2½d. was demanded, was passed without trouble. After this place we began to put on speed, and for long stretches of the perfectly straight road I managed to average a kilometre a minute, the rate of travel often rising to seventy miles an hour. When about ten miles from Brandenburg I ran into a cart through trying to pass it on the proper side. As a consequence several spokes disappeared from our right fore wheel, and a headlight was demolished. We managed to get on, however, only to have the petrol give out when six miles from Potsdam, and simultaneously, as though one trouble were not enough, a tyre gave out. However, all misfortunes come to an end, and by ten o'clock we reached our hotel at Potsdam.

On the following day, while the car was being repaired, we went to Johannisthal by train, lunching at the weirdest of roadside inns that Germany supplies. After transacting such business as we could with the firms we had come to see—the Albatros and the L.V.G.—and in each case meeting a flat refusal to supply any machines abroad, as they were full of orders from the German and Austrian Governments, we paid a mark apiece and went into the public part of the aerodrome. Only the great Zeppelin shed, and that empty, as the ship had flown to Posen the day before, was under military guard, and no restriction was put on admission to the public. That is to say, so far as the enclosures were concerned. The ground is probably twice the size of Hendon, with three or four great collections of sheds at intervals. In one corner stands a great aeronautical laboratory subsidised mainly by the Government, and supported by the constructors. Here



One of the latest type Albatros monoplanes. Herr Boehm is the pilot.

both the Government and the designers carry out extended research of all kinds. On what, if memory is right, is the north-east side of the aerodrome are rows of sheds occupied by the smaller constructors such as the Rumpler "Taube," the Jeannin, and so on. On either side of the Zeppelin shed, which is to the right of the public entrance, are ranges of buildings, on the left in the occupation of the L.V.G., and on the right the Albatros. At the south-western extremity of the ground are a further range of sheds mostly belonging to the Albatros firm.

The aerodrome itself is considerably larger than Hendon—possibly twice the size—and is possessed of a surface about as bad as can be. As a natural golf course the place has many attractions, as an aerodrome it might be much improved. The one advantage of the appalling surface is that pilots become highly skilled in landing on bad ground.

The Albatros offices, which, I imagine, are a fair example of others, are very extensive, and are furnished neatly and well. The managing director's office has in it what I think is called a dado of aeroplanes sketched vividly in sepia, a scheme of decoration which might well commend itself even to the æsthetic of this country. The furniture is all of heavy oak, and preparation seems to be made for all time and not for a passing phase.

So far as one could gather the principal contractors to the Government are the Albatros and L.V.G. firms, both of whom build machines of very high excellence indeed. As in other

countries, official favour is turning in the direction of biplanes, and the number of monoplanes sold get fewer and fewer as the days drift by.

On the day of our first visit we saw several machines in the air, two L.V.G. biplanes, a Jeannin, and a Rumpler, besides others of which we had not the translation. Though the wind was high the officer pilots appeared to take no notice whatsoever of the direction of the wind and waddled into the air unconcernedly, and, possibly, inelegantly. Once off the ground the machines rose swiftly and well without apparent effort. The engines ran perfectly. Not once while we were there did we hear one single misfire.

Each machine is fitted with a plough brake which serves to pull up the machine at any desired spot. On all German machines it appears to be possible to alter the angle of the tail with great ease. The workmanship is beyond reproach, and every part is standardised in the true sense of the word. Aluminium finds no place in German construction, and all steel parts are well designed and well carried out. The fabric appears to be of great strength and weight, and even after months of use is still flexible under the dope. The landing chassis, while of great simplicity (resembling the Morane-Saulnier on most machines), is strong and efficient. The Taube type of wing is disappearing in German aeronautics. The newer machines all have wings of more or less conventional type fitted in every case with large balanced ailerons.

(To be continued.)

Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette" of August 4th:—

Royal Flying Corps (Military Wing).—Lieut. W. F. MacNeece, Queen's Own (Royal West Kent Reg.), from the Reserve, to be a flying officer, and to be seconded (July 15th).

From the "London Gazette," August 7th:—

Royal Flying Corps (Military Wing).—The following Flying Officers to be Flight Commanders: Lieut. Francis J. L. Cogan, R.A., and to be granted the temporary rank of Captain; Capt. Robin Grey, Warwickshire R.H.A., T.F. Dated July 29th.

Royal Naval Air Service.—Prob. Flight Sub-Lieut. Archibald Corbett-Wilson to be Flight Lieut. Dated July 15th.

NAVAL.

The following appointments were made at the Admiralty on August 5th:—

Flight Commander J. N. Fletcher, to the "Pembroke," additional, for Airship No. 4, in command, to date July 21st.

Flight Commander A. D. Cunningham, to the "Pembroke," additional, for Airship No. 4, to date August 4th.

Acting Flight Lieutenants—G. R. Bromet, G. W. W. Hooper, and L. Tomkinson, to the "Pembroke," additional, for the Eastchurch Naval Flying School, temporary, to date August 1st.

Probationary Flight Sub-Lieutenants—F. M. L. Barr, H. G. Wanklyn, and J. M. R. Cripps, to the "Pembroke," additional, for the Eastchurch Naval Flying School, temporary, to date August 1st.

Messrs. J. E. B. Thorneley, D. Murray, A. Nickerson, N. Sholto Douglas, E. D. Bauman, and J. M. D'A. Levy have been appointed probationary flight sub-lieutenants and to the "Pembroke," additional, for special course at Eastchurch, to date August 5th.

Royal Naval Reserve—Sub-Lieutenant H. R. Busted has been appointed acting flight lieutenant, for temporary service, and to the "Pembroke," additional, temporary, to date Aug. 3.

The following promotion in the Royal Marines has been approved:—Captain C. E. Risk, R.M.L.I., granted the temporary rank of Major while holding the appointment of Squadron Commander in command of a Naval Air Station, to date July 1st. (Squadron-Commander Risk is O.C. Felixstowe Air Station.)

The following appointments were made at the Admiralty on August 8th:—To be Probationary Flight Sub-Lieutenants and appointed to the "Pembroke," additional, for Eastchurch Naval Flying School, to date August 5th: H. de Havilland, C. Lan Davis, G. B. Dacre.

Every day observation flights have been carried out at Calshot over the Solent and Spithead at intervals. Night flying is also reported to have taken place.

The Sopwith bat-boat (Circuit of Britain 200 Sunbeam) has been flying from the Sopwith works at Woolston a great deal during the week, being out Wednesday evening, Thursday evening, and Friday evening. This machine flies very well with a good turn of speed. The Avro Circuit of Britain machine has also been flying over the Solent and Southampton Water Thursday afternoon and Friday morning, using Calshot Air Station as her base.

It is understood that the Admiralty have taken over all the Circuit of Britain machines which have proved their capability.

* * *

The first seaplane mother-ship for the Royal Naval Air Service will be named "Ark Royal," and is being built by the Blyth Shipbuilding Company. A sum of £80,972 is allotted to be spent on her by March 31st next. The name is an old and honoured one, chiefly associated with the destruction of the Spanish Armada. Also, it has humorous possibilities.

* * *

Flight Lieut. Lord Edward Grosvenor, R.N., and Lady Dorothy Browne, daughter of the Earl and Countess of Kenmare, were married on August 5th, at Lyndhurst, Hants. Katharine Duchess of Westminster and Lady Helen Grosvenor were present. Lord and Lady Kenmare were unavoidably prevented leaving London. Lord Edward Grosvenor is attached to the Royal Naval Air Station at Calshot.

* * *

At Eastchurch during the past week there has been quite a lot of flying by naval pilots. Shorts Nos. 1, 10 and 34, Sopwith No. 33, Deperdussin No. 7, D.F.W. 154, and B. E. 50, and machines 66, 101, 188, and 13 were amongst those flown.

A number of machines departed for another place early on Sunday morning. Certain military B.E.s were flying at Eastchurch on that day also.

MILITARY.

The following communiqué has been received:—

The Secretary of the War Office announces that the Naval and Military Aeronautical engine competition is now closed, and that the results will be published shortly.

War Office, August 10th, 1914.

A notice posted at the War Office states that men of the following trades are urgently required for the Royal Flying Corps:—Blacksmiths, cable-joiners, carpenters and joiners,

clerks, coppersmiths, draughtsmen (mechanical), drillers, dynamo attendants, electric bell fitters, electricians, engine testers, fitters, instrument repairers, joiners, metal joiners, motor fitters, painters, pattern makers, photographers, plumbers, riggers, sail makers, switch-board attendants, tin-smiths, tool grinders, turners, wheelwrights, white-smiths, wireless operators, wiremen, wood turners.

Pay varies according to trade, from 4s. to 7s. 6d. per day, all found. Applicants for enlistment should apply in person to the Craig's Court entrance of the Central London Recruiting Depot, or to the officer commanding the Military Wing, Royal Flying Corps, Farnborough, Hants, and must be prepared to furnish certificates of character, of previous trade experience, and of present trade qualifications.

* * *

The following appeared in a Special Army Order issued by the War Office on August 4th:—

(1) The Aircraft Park will carry out the duties of the Ordnance Aircraft Depot on mobilisation. It will, therefore, proceed abroad with a Stores Section, under an officer i/c stores.

An Ordnance Aircraft Depot will be formed at Farnborough.

That portion of the Aircraft Park which is left at home will continue to carry on its function of receiving aeroplanes passed by the Inspection Branch, under an officer detailed by the Officer Commanding, Royal Flying Corps (Military Wing).

This portion of the Aircraft Park will be attached to the Reserve Aeroplane Squadron.

(2) The Aircraft Park will be located at the Advanced Base.

A Royal Flying Corps detachment, provided with mechanical transport, will be sent forward to the regulating station, a portion of this transport being sent forward to railheads and attached to the Supply Columns supplying squadrons in the field, under arrangements to be made by the Officer Commanding Royal Flying Corps detachment. The Royal Flying Corps transport attached to Supply Columns will accompany them to the rendezvous concerned whenever aeronautical stores are sent up from the advanced base.

(3) At the refilling points squadrons will transfer the stores to a squadron heavy tender, the Aircraft Park heavy tender returning with the Supply Column to railhead.

(4) No stores are to be unpacked from their packing-cases until they reach the refilling point.

(5) The detachment remaining at the regulating station referred to in paragraph 2 will be attached to the nearest Army Service Corps unit for food; the personnel at railheads being attached to the Supply Columns concerned.

(6) The system of demanding stores, etc., laid down in Royal Flying Corps Training Manual, Part II, paragraph 7, will be adhered to, with the exception that demands for stores will be made to the Aircraft Park.

The adoption by the War Office at this juncture of the German system of sending officers and N.C.O.'s to do their preliminary training at civilian schools, and paying the schools adequately for their work, would mean an enormous increase in the number of military pilots within the next few months.

The various schools are at present inundated with inquiries from civilians who wish to become military aviators and who cannot afford to put down £75 for their training, with the chance of being refused by the R.F.C. on physical or social grounds after they take their certificates, though many are willing to pay £20 or so on account, and the balance when accepted. This is not a possible proposition for the schools, but if the War Office and Admiralty would reverse the usual process, everybody would profit thereby. Let the authorities put a would-be aviator through the usual tests as to physical fitness, and suitability to hold a commission, and then let them give the school selected by the candidate a guarantee to pay over the £75 as soon as the pupil passes for his certificate. The schools will jump at the offer, though £75 is a very inadequate sum if a school is to be run on German lines.

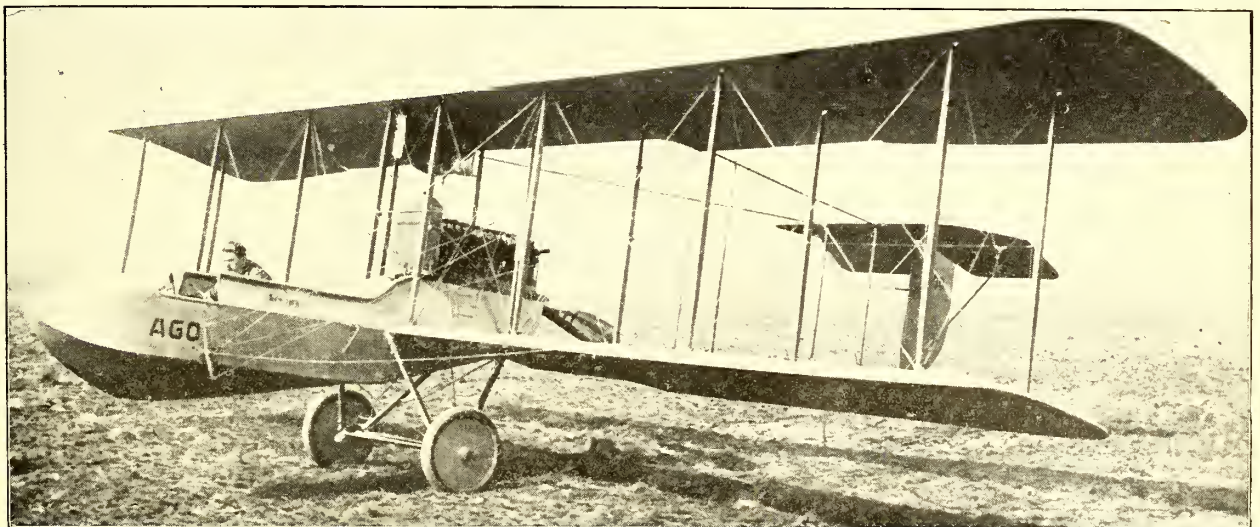
Matters would be improved greatly if a further offer of a second £75 were made for the training of the pupil to the point of passing the C.F.S. flying tests. This would oblige the schools to keep modern, high-powered machines, fit for active service, and also it would reduce the amount each pupil has to be taught at the C.F.S., where he would only have to go through a short course of technical training, and would not have to be taught to fly properly, as most "certificated aviators" who go there have to be at present. Up to the present no school has received proper official encouragement, so practically no school trains its pupils to become real aviators, with the result that the ordinary naval or military pilot, doing more than three-quarters of his training in flying at the C.F.S., costs the country at least four times as much as he would do under a properly arranged system.

* * *

On August 3rd Mr. E. L. Gower made test flights on a new 80-h.p. tandem two-seater Blériot, afterwards delivering it to Farnborough. On August 7th, in the morning, Mr. Gower repeated this performance with a 50-h.p. single-seater, and later the same day took the "total visibility" type machine shown at Olympia over and put her through tests. This machine is said to behave splendidly in the air.

FRANCE.

As was expected, the report of the ramming of a Zeppelin by M. Garros is now known to be untrue. A letter from Mr. Oswald Watt, written three or four days after the report was circulated, stated that MM. Garros, Audemars, Védrières, and



A German Gun-carrier. A New Type "Ago" biplane with the pilot in the afterseat.

Pégoud were then at one of the French military air stations awaiting instructions to go to the Eastern Frontier.

Mr. Watt, who is a Captain in the Australian Army, being unable to return to England, has joined the French Aeronautic Service, and as he is a rather more than useful Blériot pilot his services and experience should be of value. He and the other pilots mentioned are apparently attached to a Blériot "escadrille," though he does not state so definitely in his letter. The reported performance of M. Garros is apparently not current in Eastern France, as he makes no reference to it.

The report evidently arose from the fact that the pilots of various French "escadrilles" have drawn lots as to who shall first have the honour of trying to destroy a Zeppelin by any means available—ramming is not specified as a necessity. M. Garros won first place in his escadrille, and the story apparently expanded from that beginning.

The quiet and earnest spirit which animates the French Army is typified by a letter to the editor of this paper from M. Louis Noël, written from Boulogne on his way to join his regiment at St. Omer. He says, apropos leaving England—"Anyhow—that is all over for a little while. I hope to see you again, but if not, well I shall be pleased to give my life for the future happiness of France and England. I am very sorry to leave so many good friends behind, but above all, *La Patrie!*"

It is understood in France that when the mobilisation of the French Army is completed those men who are trained workers in aeroplane or aero-engine factories will be sent back to their respective employments, as it is considered that in producing new machines to replace the wastage of war they will be more useful than in the firing line.

On Monday, August 3rd, considerable excitement was caused in Paris by the appearance of a Dérand armoured biplane over the city. The pilot flew very low and had a great ovation from the crowd.

M. Michelin has placed the sum of £40,000 at the disposal of M. Poincaré for distribution to French aviation heroes—many of whom may, unhappily, have passed away before the distribution of the reward.

On August 6th the whole Franco-German frontier was patrolled by aeroplanes on both sides, and artillery were also in position to endeavour to destroy rival machines.

Mulhouse—or Muhlhausen—in Alsace, which was captured by the French Army on Saturday last, is one of Germany's important military aviation centres. It is about of second-class rank, Metz and Strassbourg being the chief centres of the south-western corner. At Mulhouse also are the Aviatik Works, where some of the best German aeroplanes are built. The Aviatik firm had originally some connection with Farman Frères, or, at any rate, they imitated Farman's as closely as possible. More recently they have built tractor biplanes of the Avro type, Ernst Stoeffler being their chief pilot.

A French military aeroplane, working over the Franco-German frontier from Belfort, is said to have been riddled with bullets and the observer to have been wounded in the thigh. The pilot was able to reach Belfort safely.

It is reported from Boulogne that an airship of unknown nationality was seen over the Straits of Dover from Boulogne on Monday morning. It was not thought to be a German vessel.

On Monday, Aug. 3rd, a German aviator flew over Lunéville and dropped three bombs, doing some damage but killing no one.

GERMANY.

A passenger travelling from Berlin to Amsterdam on August 6th relates how an aviator, presumably French, was fired on by German troops. He succeeded in climbing up out of range, however.

According to "Reynolds' Newspaper," a message from Amsterdam on Saturday night says that a dispatch from Berlin states that the military authorities there have warned the population against firing on airships flying over the city. The inhabitants, the notice states, need not be afraid that the airships of the enemy will reach Berlin.

RUSSIA.

It was reported from St. Petersburg on Monday that

German aeroplanes were flying daily in the direction of Kovno.

AUSTRIA.

A telegram from Vienna announces the destruction of a Russian military Sikorsky biplane on the Russo-German frontier on August 4th. The crew of three are said to have been fired on by Austrian troops. The machine was brought to the ground with fatal results to the crew.

ITALY.

Before this is in print, M. III should have left the cradle of her race at Bracciano and have taken her first official voyage. She is overdue at Iesi, where she is to be stationed and whence she is expected to make great flights. The journey from Rome to Iesi is not an easy one, and altogether such a stiff maiden voyage suggests great confidence in the vessel as revealed in her trials around Bracciano.

A careful examination of the proposed Bill for the re-ordering of military aeronautics suggests that a policy of foundation-laying is intended at the present, rather than one of advance. Solid theory and efficiency of organisation—the while trained brains, theoretical and practical, test and sift the world's so-called progress. Overlapping of departments is to be carefully pruned, according to this projected Bill.—T. S. H.

BELGIUM.

A German aviator is reported to have been killed near Liège on Tuesday, August 4th.

An aerial duel is reported to have been fought between a German and a Belgian aviator near Liège on August 5th. A German aeroplane was sighted near Repinster on the frontier, and M. Fornau went to intercept it. It is said that the two pilots exchanged revolver shots without effect, and that the Belgian tried to ram the German, but the latter landed alongside a troop of German cavalry and decamped with them, forsaking his aeroplane, which was captured by the Belgians.

It is also reported that on August 5th a German aeroplane was rammed by a Belgian aviator with disastrous results to the former. The Belgian is said to have escaped with his life. This is just possibly true if the Belgian wiped out the German machine with his chassis. It may be only another version of the preceding story.

On the evening of August 6th two Belgian aviators left Liège to fly to Brussels. They were compelled to land ten miles to the west of the town through engine trouble. The country was overrun with German patrols, but the pilots managed to stow their machines away at Waremmes and returned to Liège. On the previous day the two aviators had been under fire in the neighbourhood of Visé, the German troops raining showers of shrapnel at them but without effect.

It is said that on August 5th a Zeppelin airship was brought down by shellfire from the Belgian fort at Hervé, her crew being annihilated.

At daybreak on August 6th another Zeppelin is reported to have flown over the northern fortifications at Liège and to have dropped a quantity of explosives, doing considerable damage.

The first six French infantrymen to arrive at Liège came in on an automobile on Thursday 6th, their coming being heralded by an aeroplane.

According to the Amsterdam correspondent of the "Morning Post," German aeroplanes threw out manifestoes to the Belgian people near Visé.

U. S. A.

"Aircraft," New York, states that the May bill organising a special aviation service in the Signal Corps of the army was agreed upon July 11th and has gone to the President. This bill provides for a service of 60 officers and 260 enlisted men and creates special grades of "Military Aviator" and "Aviator Student" and provides for an increase in the pay of officers and men of from 25 to 75 per cent.

Foreign Notes.

Germany.

The seaplane meeting to be held at Warnemünde from August 1st-10th has been abandoned, as most of the pilots, having won parts of the national prizes, are engaged to military service.—H.

General Inouye, Inspector-General of the Japanese Transport

Troops, visited Friedrichschafen early in July, and inspected the Maybach motor works and the Friedrichschafen Aeroplane Company.

Probably the oldest passenger to ascend in an aeroplane is a plucky old German of eighty-four who went up for nearly an hour at Hamburg the other day.

Italy.

Achille Landini, who used to fly the S.I.A. hydro-mono, left Cameri on July 27th on a Gabardini 80 Le Rhone, with a well-known Alpine climber on board, crossed the Monte Rosa over the Northend Shoulder and landed in the Rhone Valley. The Northend is not the highest point of the mountain. The weather on the Swiss side was bad and the flight took 3 hours, while the greatest altitude reached would seem to have been some 14,000 ft., so that he put his own (Italian) altitude-with-one-passenger record, made quite recently, well into the shade. The flight is very significant but attracted little attention in the machine's own country.

On the next day Cameri's triumph was saddened by the death of Marcel Caviggia and a South American pupil, Camilletti, who was being instructed. The two were coming down after a high flight on a Gabardini, during which Caviggia had, it seems, been doing stunts, and till evidence to the contrary comes along, one can only attribute the disaster to a miscalculation on the part of the pilot. Not being strapped in, first the pupil, then Caviggia was thrown out as the machine after a regular but steep "piqué," started a mad left-hand corkscrew movement which ended in her turning turtle.

I learn from Venice that a German seaplane, name not understood of the people presumably, as it is not given, when out for its reception tests near the arsenal, fell badly. Both the German pilot and the passenger got out of danger by swimming.

Desbrouères, whose interests were till so recently wrapt up in the welfare of his friend the late Philip Cevasco, showed on July 25 that he can handle a Gabardini as well as many others by starting out to improve our poor height record. When next heard of he was at Lodi, quite a respectable cross-country

journey off. He had not bothered to improve the record, which is no matter.—T. S. HARVEY.

Turkey.

The Turkish Minister of War has recently issued a manifesto reminding the Turkish people of their glorious past, and pointing out that the disasters of the last few years are due to the softening of the fibre of the people. He sets forth that in order to render the children worthy of their famous ancestors, their well-beloved sovereign has ordained the formation of "Sports Committees" throughout the Turkish Empire. These committees are to organise sports, exercises and "excursions" in the neighbourhoods where these committees exist. The youth of the district will also learn the use of firearms with rifles and cartridges distributed by the State, and officer-instructors will be allotted to each district.

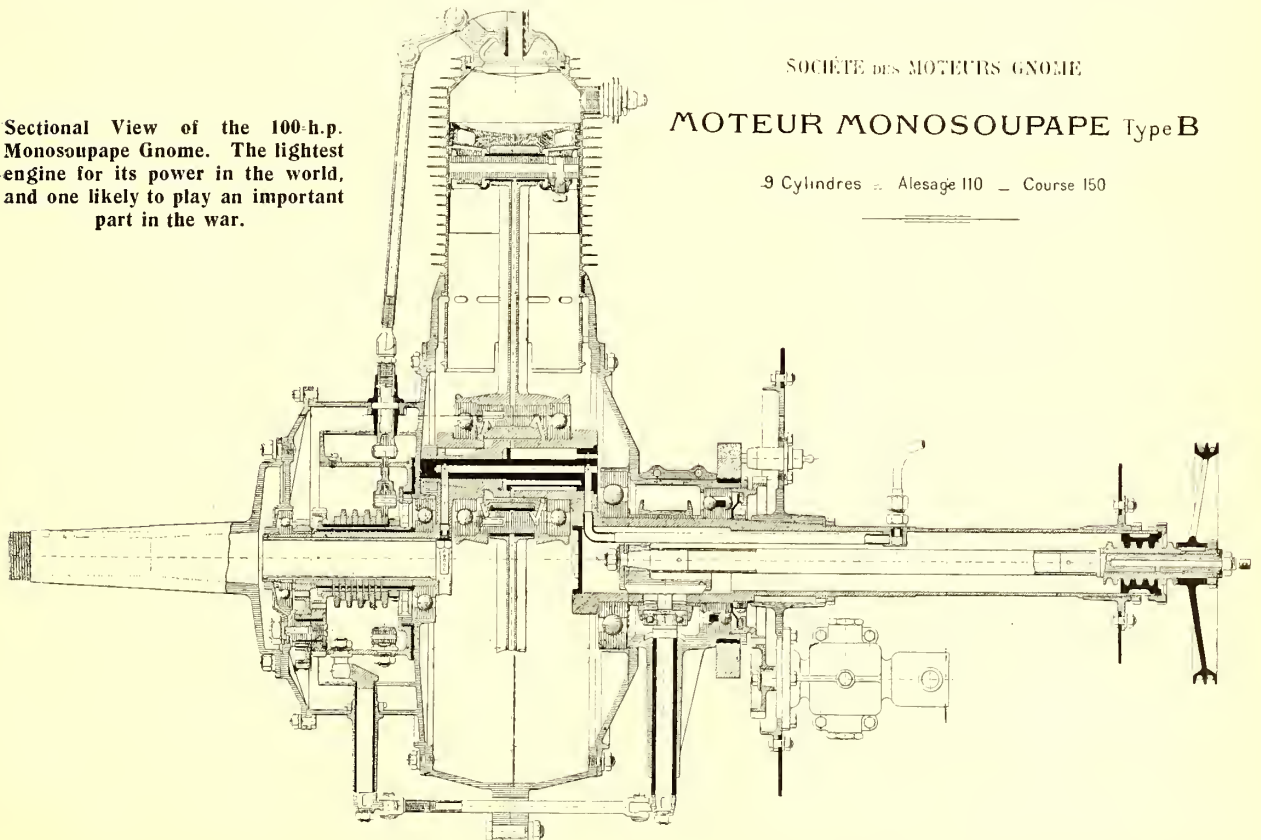
An excess supply of cartridges will be sold at cost price plus a small difference, which difference will be distributed in the form of prizes to those under instruction. Financial assistance will be given to the committees by the State.

Young men who have obtained certificates of efficiency from the Sports Committee will enjoy the following important benefits when called up for their military service: (1) Those who volunteer after the age of 18 years will be permitted to choose the regiment in which they wish to serve; (2) If they do not wish it themselves, they will not be sent to the Yemen or the Hédjaz; (3) If they do well in the army they will be promoted to corporal four months before their comrades; (4) After a year of service they will be eligible for administrative posts; (5) Those with a good army record will be granted leave for 2½ months after the annual manœuvres.

The idea of these committees is thoroughly sound, if they can be carried on without the corruption for which Turkey bears an unenviable reputation.

The Turkish War Office is already taking a lively interest in aircraft, and it is believed that a part of the duty of these "Sports Committees" will be the organising of aviation competitions with the assistance of the Army aviators. One trusts that in due time similar Government encouragement will be given to British sport, in the interests of national efficiency.

Sectional View of the 100-h.p. Monosoupape Gnome. The lightest engine for its power in the world, and one likely to play an important part in the war.



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MOTEUR MONOSOUPE Type B

3 Cylindres — Alesage 110 — Course 150

Sweden.

On the appeal of Dr. Thulin, the Stockholm newspaper "Dagens Nyheter" has as first result given an aerodrome in the neighbourhood of the Swedish Capital. Dr. Thulin is staying at Paris looking for an hydro-aeroplane to fly in the Northern Seaflight.

When Captain Sundstedt would start to Stockholm with his wife as a passenger after his fine flight to Malmö, as reported lately, he had an accident owing to motor failure. He and his wife were hurt and brought to the hospital, but soon recovered, and when the but little damaged biplane has been repaired he will fly to Denmark to fulfil some engagements.

An aeroplane competition which was recently arranged at Malmö was not very successful. Dr. Thulin—Morane mono—remained the only competitor, the two Army pilots, Lord Hamilton on Bréguet biplane and Lieutenant von Porat on a Nieuport mono met with accidents, the former on account of motor troubles, the latter because of a too sharp turn over the very little aerodrome.—Hr.

Norway.

Lieut. Tryggve Gran's six hours' flight over the North Sea is Scandinavian duration record. For the last three half-hours Lieut. Gran was forced to encompass a broken petrol pipe with his right hand, and when he saw the coast of Norway he wept for pleasure.—Hr.

Denmark.

On Sunday of last week the Zeppelin airship "Sachsen" should have made a journey Berlin-Copenhagen-Berlin, but the Minister of War has forbidden any German airship to leave Germany, as the army will make use of it.

On Saturday two weeks ago the well-known German aviator Caspar—with his wife as a passenger—Schlüter and Christiansen—all on Hansa-Dove monoplanes from Caspar's factory, Centrale für Aviatik, Hamburg—started a flight to Copenhagen. After a landing at Kiel, Caspar and Schlüter reached Copenhagen, the latter, although starting latest by 10 minutes, arrived first by 10 minutes, being presented with a big silver cup by the Danish Aeronautical Society. When Christiansen intended to start, the propeller struck his passenger, hurting him and damaging itself. Next morning, having received a new one, he flew to Køge, near Copenhagen, where he was brought down by engine troubles.

In the Sunday afternoon's flying Caspar met with a rather rare and dangerous accident. His good Mercédès motor really burst in the air, the aeroplane catching fire, but luckily Caspar escaped unhurt, and a proof of the strongness of the "dove" was that after scattering the balustrade of the aerodrome, running over a water-ditch and boring itself into the earth, only the left wheel was damaged. Caspar was sure that petrol gathering in the lower part of the crankshaft house had caused the explosion, whereby he lost his propeller and part of the crankshaft. But thus there were spare parts for the motor of Christiansen's "dove" and accordingly he duly reached the Copenhagen aerodrome, and on five days Schlüter and he gave some fine displays with races, passenger flights and demonstration flights to the military authorities.

On Friday morning Schlüter with his passenger Bonnet flew to Hamburg in just 3 hours (with the express train it takes 10 hours), while Christiansen in his attempt to do the same smashed up the monoplane.

For the last week Prince Axel of Denmark and the two Lieuts. Laub and Hoeck have made long flights on the naval "F.B.A." flying-boats.—Hr.

Switzerland.

A good deal of flying is taking place in Switzerland. On July 4th M. Kunkler flew over the exhibition at Berne with a passenger on an Otto biplane.

On the 15th M. Bider flew a small type Aviatik biplane from Mulhouse to Berne, accompanied by his brother.

On July 18th, M. Wanneck flew from Dubendorf to Berne on an Aviatik monoplane in 1 hr 20 mins.

Australia.

On Friday, June 5th, "Captain Penfold," who will be remembered as a Bristol pilot, dropped from the suspension bridge at North Sydney in a special parachute designed to open quickly and landed safely in two feet of water 172 feet below.

Writing on June 29th, Mr. Vincent Taylor, professionally "Captain Penfold," the Australian aviator and parachutist, said that for the past two weeks Mr. Hordern's Maurice Farman waterplane had been doing nothing, but that Mr. Jones had been doing a considerable amount of flying in West Australia on his Caudron. He gave a good display at Kalgoorlie in Western Australia the previous week. On Saturday, June 20th, M. Guillaux gave a fine display of looping at Adelaide, South Australia, and on Saturday, June 27th, M. Guillaux flew across Melbourne visiting several football grounds on the way, flying low down at each place.

Mr. Taylor also said that Mr. A. J. Roberts had now got a small airship inflated with hydrogen on the Royal Agricultural Society's grounds at Sydney. Mr. Roberts is making his own hydrogen by the usual process with sulphuric acid and iron filings. The envelope was made by C. G. Spencer and Sons in London, and is of silk painted with aluminium. The envelope is about 80 ft. long by 20 ft. diameter, the car being of triangular section suspended from a band round the envelope. It has a triple elevator forward just behind a two-bladed tractor screw which is driven by a two-cylinder engine. Up to the time of writing it had only been out in the open as a captive balloon to adjust the frame and cordage, and it had then lifted two men and a few bags of ballast.

Further, Mr. Taylor said that on the day following that on which he wrote he had an engagement to drop by parachute from a jib-crane at the top of a new building in Sydney City, the height of the jib being about 150 ft. or approximately the same as the height of the bridge from which his recently recorded drop was made.

War and the Press.

The "Daily Express" says: "There is a common delusion that wars are good things for newspapers. The contrary is, of course, the fact. A war means an increase in circulation, but it also means tremendous expense and a heavy fall in the income from advertisements. If Mr. Norman Angell is to be believed, and wars are waged for economic reasons, newspapers would always be on the side of peace."

This applies equally to the aeronautical Press. In the case of THE AEROPLANE, for instance, several important advertisers have withdrawn, and the expenses of production have increased.

Mr. Sayers, the assistant-editor, has joined the Royal Naval Air Service, and his lucid practical articles will be greatly missed. It has, however, been possible to arrange for many other articles of interest to take their place, and it is hoped that the paper will continue to deserve the high appreciation which its readers express.

The Latest Avro Seaplane.

It is of interest to hear that the Avro seaplane (225 Sunbeam) built for the Seaplane Circuit was tested on Wednesday.

Mr. Raynham put the machine through the acceptance tests at Calshot with over four hours' fuel, a passenger, anchor, etc. He quickly climbed to 4,000 ft. and flew at this altitude for about an hour. The machine handles easily and takes the banks without using the ailerons. There is a big reserve of power as the machine will fly at 800 r.p.m. and will run up to 1,100 r.p.m. A Sunbeam engine of 150 h.p. is fitted.

The floats and chassis are very strong, apparently having been built with a view of standing a lot of hard work and wear, the floats and chassis alone weighing over 800 lbs. The floats are sprung to the extent of six inches, although normally only half this amount is used, but the extra three inches should be useful in case of bad landings, etc. The speed range appears to be about 40 to 80 m.p.h.

New Company.

Jordan and Sons, Ltd., Company Registration Agents, Chancery Lane, W.C., advise that the following company has been registered:—

RHONE ENGINE COMPANY, LIMITED, (137,262), Regd. July 29th. Manufacturers and designers of and dealers in motors or motor power of any kind, aeroplanes, hydroplanes, motor-boats, launches, submarines, ships, men of war, &c. Nom. cap., £40,000 in £1 shares. Sole director, R. de Saint Mathurin (so long as he holds 1,000 shares). Subs. (1 sh. ea.):—A. R. Monks, 123, Cannon Street, E.C., gentleman; T. Trimmell, 123, Cannon Street, E.C., gentleman.

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Ordnance Extraordinary.

In "Aircraft," New York, one signing himself M. E. Henry writes as follows:—

"Another American invention has been taken up abroad after having been offered to this country first and rejected. It is the Davis non-recoil gun, for use in aeroplanes.

"The first of these guns has been consigned to the Naval Ordnance Officer, Woolwich, England, and will be subjected to an exhaustive series of tests and will be adopted if it meets the requirements.

"When two shot guns are fired butt to butt there is no recoil. That principle has been used in the Davis non-recoil gun.

"The Davis gun is in reality two guns. The one which is to be sent abroad fires a six-pounder from one end and a load of bird-shot of equal weight from the other. The impacts of the two loads compensate, and as a result there is practically no recoil.

"The gun is ten feet long and weighs 156 pounds, but the regular service guns of the same calibre will weigh only fifty-four pounds.

"They are mounted forward on the aeroplane. The operator raises or depresses the muzzle with a gear operated by the right hand, while with the left hand the horizontal adjustment is effected. The firing is electrically accomplished. The operator holds a double disc between his teeth, and when both horizontal and vertical adjustments are satisfactory he bites on the disc, closing the circuit and firing the gun, which has a muzzle velocity of 2,000 feet a second.

"The projectile has two fins to direct its course, and the bird-shot, fired in the opposite direction, are graphted to keep them from packing and becoming dangerous.

"The first test is to be for safety, then for velocity, penetration and ballistics, and after that the gun will be taken to the Royal Naval Flying School at Eastchurch, Isle of Shippey, where it will be mounted on an aeroplane and tried out.

"The Davis non-recoil gun was offered to the American Government, but from all indications the offer was pigeon-holed."

One knows O. Henry as a humorist, but who is M. E.? It seems that a pigeon-hole is the right place for a gun firing bird-shot. The whole scheme suggests ideas. If the charge of bird shot is heavier than the shell, the gun can be used to accelerate the aeroplane. If the bird-shot is caught in a net it can be reloaded into the gun over and over again, and so reduce the total load carried by the aeroplane. Failing this, by training a special breed of birds to pursue aeroplanes, the bird shot discharged at the back of the gun will probably bag some of them and supply the commissariat.

By making the firing disc of chewing gum the aviator (pronounced "avytatter" in the United States of America) can obtain amusement and impart chastisement at the same time. One notes, however, that it is not advisable to use an aeroplane with either a propeller, or wings, or a tail, as any of these members might obstruct the passage of the bird-shot. Also it is advisable to produce a gunner of special anatomical design—say one with an aching void in his midst.

Books Worth Reading.

Those who would understand something more of what this war means than they are likely to learn from papers are strongly recommended to read "The Iron Year." This book deals with the Franco-German War of 1870, from the German point of view. The author is one Walter Bloem, and it has been translated by Miss Stella Bloch, who has been the German correspondent of THE AEROPLANE since the paper started, and who was previously the correspondent of the deceased "Aero" when it was edited by the present writer. Both the telling and the translating of the story are done with such naiveness and transparent honesty that they carry conviction, and show one the simple-minded, easily imposed upon, earnest German soldier in a light different from anything to which one is accustomed. It was one of the most widely read books in Germany, and it has been officially stated that the

Kaiser read it in instalments to his family. The price of the book is 6s., and the publishers of this paper, Wm. Dawson and Sons, Ltd., 2, Breams Buildings, E.C., will be pleased to supply it.

I also recommend the reading of the series of books written many years ago by MM. Erckmann and Chatrian, as they deal entirely with the Alsatian people and the country over which fighting is now taking place. Those particularly worth reading are "The States General," "The Country in Danger," "Year One of the Republic," and "Citizen Bonaparte," which are all practically one book—being the story of a peasant soldier under the First Republic. Then read "The Conscript of France in 1813" and its sequel "Waterloo," again really one book, and a classic at that. "The Great Invasion, 1813-14," fills the gap in between, being of the same district, but about different characters.

Anyone who reads these books will learn far more of what war is to those who are in it than is possible in any other way, and, besides, they help one greatly to understand the feeling which animates the French in this great struggle. I believe an English translation of all the Erckmann-Chatrian books can still be had, though I have had my own collection for something like 30 years.—C. G. G.

The Aerodromes To-Day.

It seems probable that various civilian aerodromes in this country will come temporarily under military control, though possibly remaining under civilian management for internal regulation.

Major Lindsay Lloyd has left Brooklands for the time being, as he is on service with mechanical transport. The Vickers School at Brooklands has closed down, all hands being turned over to the works for the production of aeroplanes. The Bristol School will continue to put pupils through in its usual quick and effective way for their certificate tests. The pilot in charge is Mr. Stutt—Messrs. Jullerot, Busted and Sippe having gone on service. The Blériot School will train pilots for the Blériot flights of the R.F.C., Mr. Gower being the instructor, as well as test pilot for the delivery of new machines to the A.I.D. It seems possible that a school under purely military management may also be established there.

At Hendon, Mr. Gates remains in charge, and the Grahame-White School will continue its work. Messrs. Carr, Noel, Lillywhite, Barr, and Dunn, having gone on service, Mr. Osipenko, a Russian pilot trained at Hendon, acts as chief instructor pro tem. The Grahame-White School machines are in excellent condition and provide good training for more modern type "pusher" biplanes of higher power. Mr. Birchenough takes M. Verrièr's place with the Aircraft Manufacturing Co. to deliver machines to the A.I.D. at Farnborough and put them through their tests. The latest products of the firm, under Mr. de Havilland's management at the works, give one great confidence in their reliability. The Beatty School, with its dual control Wright biplanes, remains open, and its system of training offers a very quick and sure method of passing for certificates. The Caudron School has at present three school machines in use and a couple more are ready for delivery from the firm's British works. These are certainly unusually safe machines for pupils, and, being tractor drawn, a pupil trained thereon is able to pass directly on to faster tractor machines when he joins the Central Flying School. The popularity of Caudrons in the French Army, and the fact that no one has ever been killed on a modern Caudron, leads one to hope that some official support will be given to the only school in this country using nothing but tractor biplanes.

Sussex County Aero Club.

Owing to rain the lawn tennis tournament is postponed to Saturday next, the 15th inst. Last Sunday Colonel A. Wooley entertained a large party of guests, who witnessed some fine flying on the Martinsyde and Pashley machines in half a gale of wind. The management will shortly announce a programme the proceeds of which will be devoted to patriotic funds.—H. GONNE (Sec.).

The Britannia Airship Committee's Scheme.

The proposed meeting in the City, organised by the Britannia Airship Committee, which was to have been held in support of the London Aerial Corps and London Airship movement, has, in view of recent events, been abandoned for the present. The committee's object is, first, to raise a fund for the construction of a giant airship as a patriotic contribution to the defences of the nation, and, secondly, to form a London Aerial Corps for training civilian aviators and for supplying the Government in an emergency with men trained in aviation. An appeal has been made by the committee for financial support.

Anti-tetanus Serum.

It may be remembered that in a remote issue of this paper dealing with Mr. Marcel Desoutter's recovery from the accident that cost him a leg, it was stated that the anti-tetanus serum to which his survival was undoubtedly due could only be obtained from the Pasteur Institute in Paris. This is, fortunately, no longer true, as Messrs. Burroughs Wellcome now manufacture and supply it in this country.

How it Should be Done.

The Anglo-American Oil Co., Ltd., proprietors of Pratt's Motor Spirit, have decided to pay all Territorials and Reservists in the employ of the company, who are called to the Colours, full pay for the first month and half pay after that period until further notice; and they have also decided to pay any other members of their staff who join the Army, Navy or Territorial Forces on the same basis. In addition to the above, the company will hold their positions open.

The Anglo-American Oil Company, proprietors of "Pratt's Perfection Motor Spirit" and "Royal Daylight and White Rose Lamp Oils" advise that they are making no advance in the prices of these commodities as they see no immediate necessity for so doing. In view of the excessive prices which are being asked for these fuels, the fact should be noted.

The Week's Work.

Weather Report.

Weather all the week dull and threatening. Windy, clouds very low, some rain.

Flying at Brooklands.

Owing to postal peculiarities the last batch of Brooklands reports prior to the outbreak of war arrived too late for the last issue of *THE AEROPLANE*. In order to maintain the sequence they are printed herewith.

Monday, July 27th, Mr. Jack Alcock and Mr. Lane returned from Wolverhampton via Snetterfield in Sunbeam-Farman, doing 84 miles in 65 mins. in very "lumpy" weather. A Bristol pusher of new design arrived, causing quite a sensation when erected. Mr. Skene was out on Mr. Creagh's Bristol, and attempted a loop not over successfully. In the afternoon Flt.-Lieut. Young arrived from Weymouth via Upavon on a Short No. 54, and then left for Eastchurch. Flt.-Lieut. F. Beevor also arrived from Weymouth and left for Eastchurch on M. Farman No. 70. Mr. Gower was out on the 50-h.p. Blériot. Lieut. A. K. Lawrence (Bristol) passed his A. and B. brevet tests, and Lieut. E. R. Coles (Bristol) his A. test. Two tractor biplanes passed over but did not land, and M. Verrier (presumably) passed over on a new type M. Farman.

On Tuesday, Lieut. A. K. Lawrence (Bristol) completed his brevet tests. Mr. Glew did some straights on the Perry tractor. Mr. Sippe with Mr. Creagh as passenger, on the latter's machine, went up to 9,150 ft., taking about 55 mins. for the flight. In the afternoon Mr. Gower was out on the 50 Blériot, Lieut. Coles (Bristol) completed his brevet tests. Mr. Sippe was out on Mr. Creagh's machine.

On Wednesday afternoon Mr. Sippe was out on Mr. Creagh's machine. Lieut. Collet left for Eastchurch on the 2nd. D.F.W. Mr. A. T. Crick took his brevet at the Blériot school.

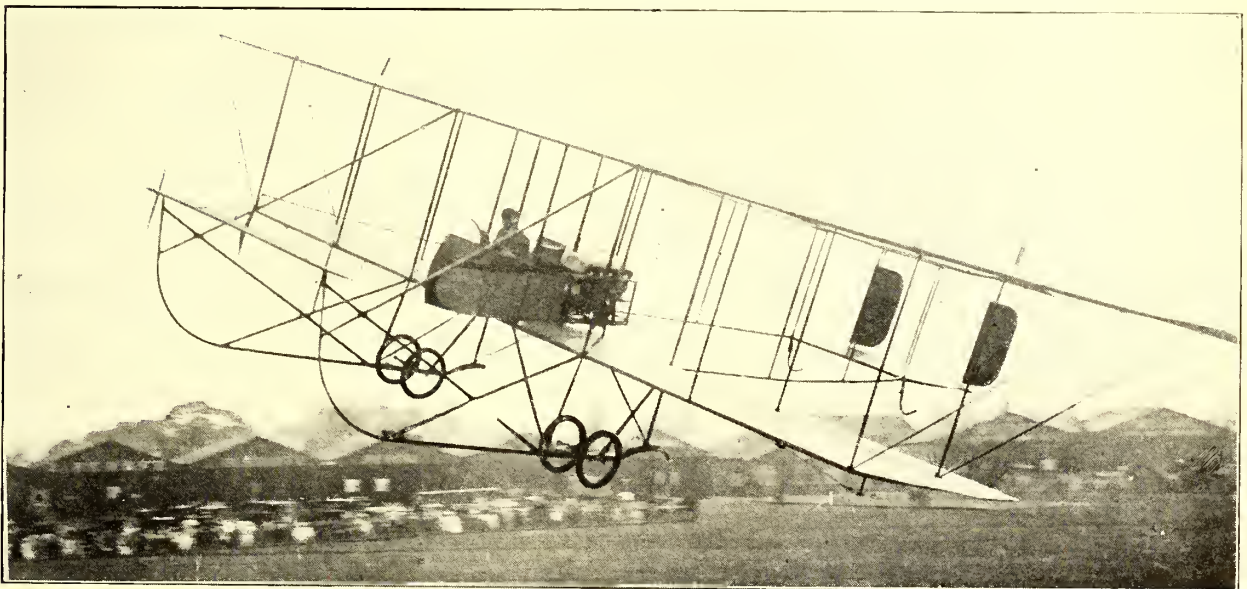
On Thursday, Major Brooke Popham and Capt. Cholmondeley arrived from Farnborough and returned later on a M. Farman. Mr. Sippe, with Mr. Creagh as passenger, on the latter's machine, went up to 11,000 ft., taking 1 hr. 25 mins. for the flight. In the afternoon, Mr. Lusted, with Mr. Dowland as passenger, arrived on the "Daily Mail" Avro, fitted a new wheel and then left for Shoreham. Lieut. J. D. G. Saunders, R.F.A. (Bristol), took his brevet.

On Friday afternoon Mr. Jack Alcock, with Mr. Lane as passenger, left for Shoreham via Tunbridge Wells on the Sunbeam-Farman.

On Saturday a Sopwith scout arrived, Mr. Hawker was out looping.

On Sunday, Mr. Hawker was again looping. Vickers Ltd. decided to suspend all school work indefinitely, but the Bristol are continuing under, one gathers, a guaranteed supply of petrol from the Government.

Further Brooklands notes will probably be suspended owing to the military situation



AT CLOSE QUARTERS.—Mr. Grahame-White passing the Judge's Box at Hendon on a Maurice Farman.

Flying at Hendon.

On Thursday, M. Noel left for France, and Messrs. Lillywhite, Barrs and Dunn, who have joined the R.F.C. Reserve, departed for Farnborough. The only flying during the day was made by Mr. Lewis Turner on a Caudron. Mr. Turner also has offered his services to the War Office and has been accepted. All machines have been taken away with the exception of the school box-kites.

On Saturday, Mr. Prosser was out on a Caudron, but no other flying was done. Although the aerodrome is almost depleted of fliers there are still some pilots left to carry out passenger flights, and the directors have decided to continue the Thursday, Saturday and Sunday exhibitions as far as possible.

On Sunday, a Henri Farman was out and later left the aerodrome in the direction of Brooklands. An agreement has been made in that the aerodrome is to be taken over by the military authorities, particulars of which cannot at the moment be divulged.

Unless the aerodrome is entirely taken over by the Government it will remain open to the public as usual, and though there will be no competitions, the training of new pilots, the testing of new machines, many of new and interesting types, and experiments in the equipment of machines for war, will make a visit to the aerodrome if anything more interesting than ever.

Flying at Harrogate.

Mr. Harold Blackburn, whose headquarters are at Harrogate, has been doing a lot of work in the surrounding districts on his Avro biplane and Blackburn monoplane (both 80-h.p. Gnoms). Since last August the latter machine has covered over 7,000 miles without having ever seen the inside of a proper aerodrome, and has shown a great gift of getting out of small fields. The Avro also has done much good work, and Mr. Blackburn has a very high opinion of her. Mr. Blackburn has now joined the Royal Flying Corps and both his machines have been taken over.

Flying at Scarborough.

Mr. Gaskell Blackburn, on his Flanders biplane, flew from York, where he had made several flights during the previous week, to Scarborough, on August 2nd, doing the 42 miles under the half-hour with a strong following wind. He had intended to land at the racecourse, but that being in the hands of certain Territorials, he was forced to land on the beach, where the misguided joy of a large crowd of Bank Holiday trippers threatened the integrity of his machine. The intervention of the military and civil forces of the realm sufficed to avert this calamity. It was impossible to fly from the beach owing to the crowd, and the machine was roped round and left for the night.

Early next morning the machine was taken to a field on the cliffs and Mr. Blackburn made flights over the bay.

Flying at Shoreham.

Too late for use in the last issue of this paper, it was reported that on Saturday, August 1st, in spite of rain, a considerable gate attended at Shoreham Aerodrome. Mr. G. M. Dyott, on his monoplane, and Mr. Cecil Pashley, on the Pashley machine, gave exhibitions, and Mr. Pashley also carried three ballot passengers. Mr. Hall's advertised looping display was impossible, owing to his having damaged his motor slightly on the previous Thursday. On Sunday a great wind prevented flying, other than the attempt of Mr. Waterfall to leave on the Martinsyde, which machine he had to abandon, as he had to return to duty with the R.F.C., and the wind made it impossible to get out of the ground.

On Monday, owing to the prohibition of civilian flying, the race to Tunbridge Wells and back was abandoned, but Mr. Hall gave a looping display and also some passenger-flights. Mr. Eric Pashley and Mr. Cecil Pashley flew the two Pashley biplanes, and Mr. Dyott gave exhibitions on his own machine.

School Reports.

Hendon.—AT GRAHAME-WHITE SCHOOL: Instructors: Messrs. Dunn, Russell and Lowe. Pupils with instr on machine: Messrs. Strickland, Courtney, Lister, Wyles, Upton, Duncan, Carabajal, Palmer, and Easter. 8's or circo alone: Mr. North. Machines: Grahame-White school machines.

Brooklands.—AT BLERIOT SCHOOL: Instructor: Mr. E. L. Gower. Pupil doing strts or rolls alone: Mr. McKinley (35 mins). 8's or circo alone: Messrs. Treloar (42 mins), Pitt (20), Miller (10). Machines: Penguin and 45-h.p. Anzani.

AT BRISTOL SCHOOL.—Instr: Mr. Stutt. Pupils with instr on machine: Lieut. Moule (8), Lieut. Bagley (11), Mr. Arbuthrot (12), Mr. Thompson (13), Mr. Douglas (3), Mr. Gamwell (6), Mr. Weir (2), Lieut. Nickerson (5). Strts or rolls alone: Lieut. Moule (4), Mr. Collins (2), Mr. Douglas (2), Mr. Weir (2), Lieut. Bagley (2), Mr. Thompson (1). 8's or circo alone: Mr. Collins (2), Mr. Weir (2), Lieut. Moule (2), Mr. Douglas (1), Lieut. Bagley (1). Machines: Three school biplanes.

Shoreham.—AT PASHLEY SCHOOL.—Instrs: Messrs. E. and C. Pashley, B. F. Hale. Pupils with Instr: Messrs. C. Winchester, J. Borton, E. Roberts, J. Woodhouse. Strts alone: Mr. E. Roberts. 8's alone: Mr. W. Mortimer. Machines in use: Pashley Pusher, Avro Tractor. Mr. W. Mortimer did first tests for certificate but could not complete owing to dark.

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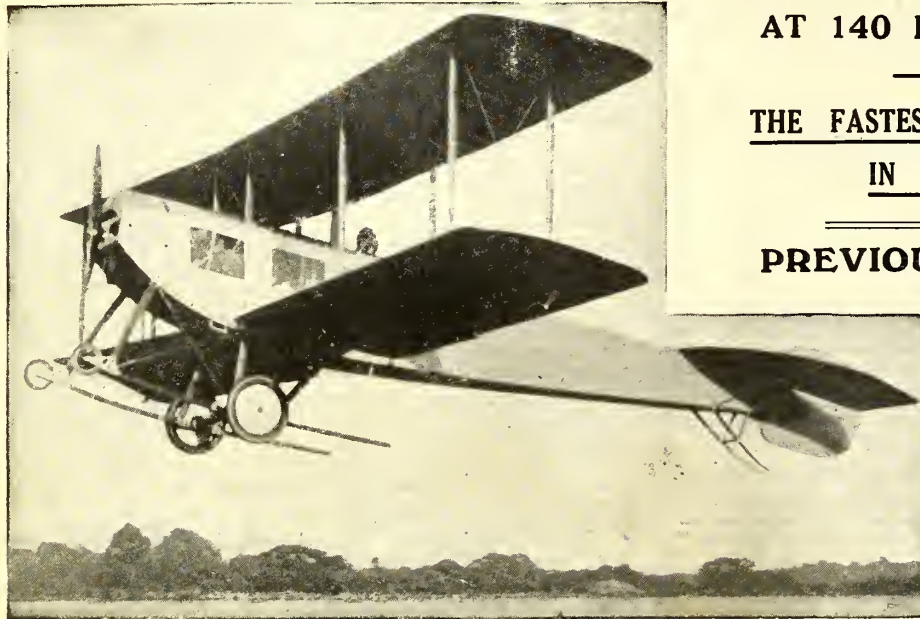
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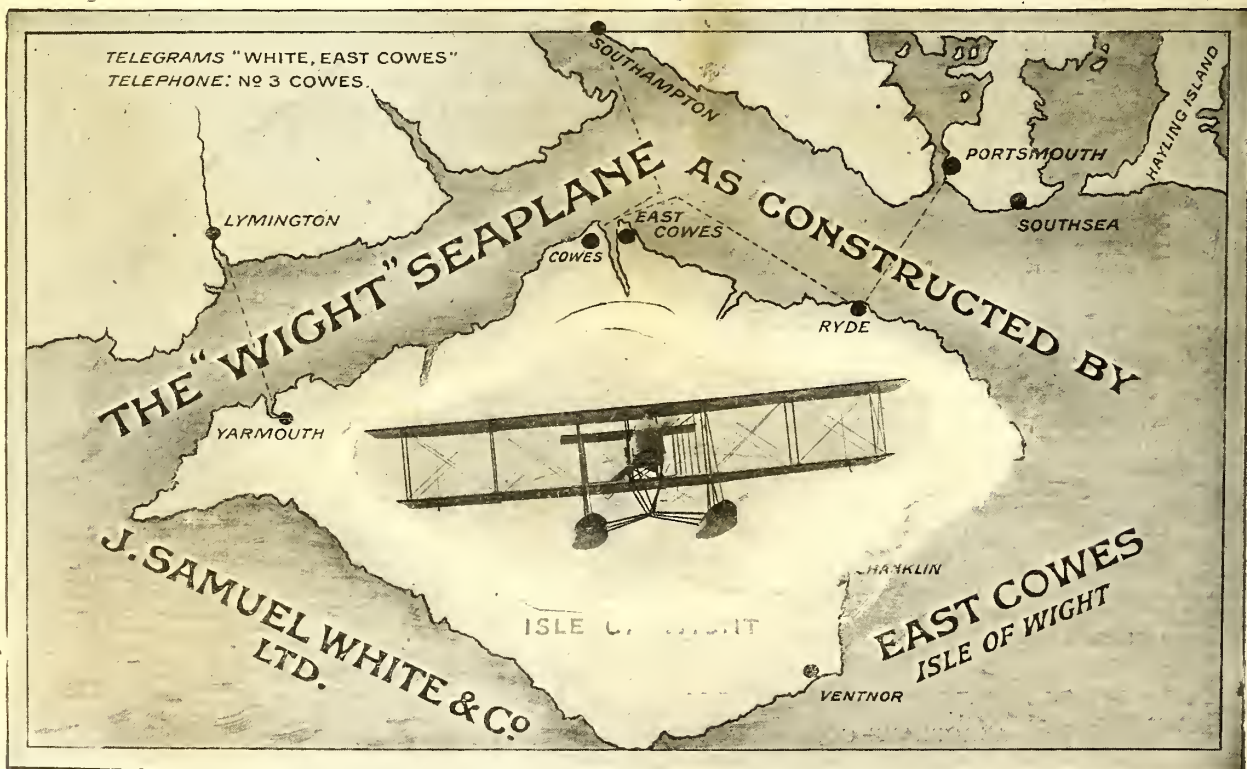
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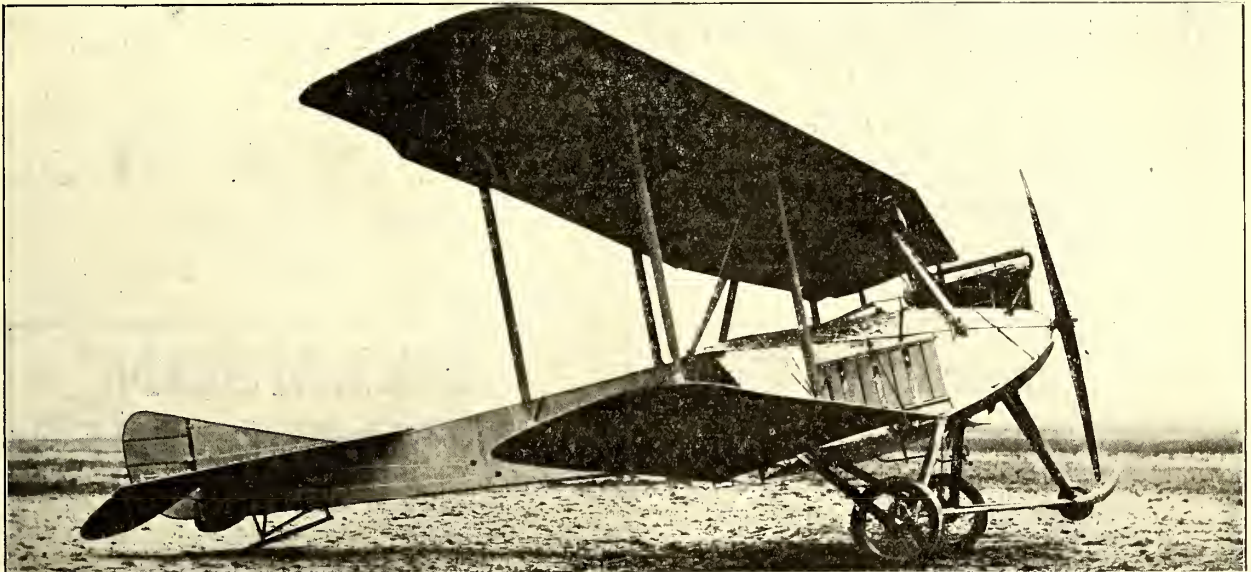
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O. AS A NEWSPAPER.]

WEDNESDAY, AUGUST 19, 1914.

No. 8

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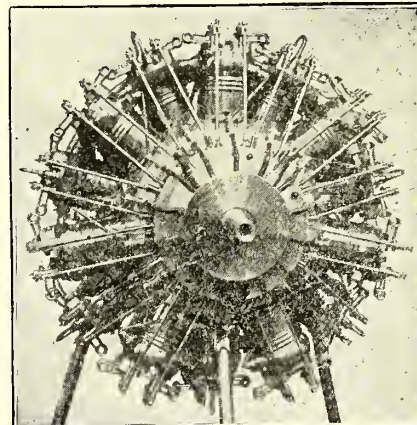
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Matters of Moment.

This is a time for united effort for the country's welfare, and so far as the aeroplane industry is concerned it is good to learn that everyone is working admirably to produce the best possible machines in the quickest possible time. Several of the big motor firms have stepped in to help the production of aero-engines, which they are the better able to do because the motor-car industry, or at any rate the pleasure-car industry, is practically at a standstill. Also, the French engine firms from whom we have been buying motors have come to our assistance most nobly. By sheer good luck it happens in some cases that engines of sizes required in this country are not wanted by the French Army, so that one finds one section of the makers' works devoted entirely to engines of one type for Great Britain, while the rest of the works are busy on those for the French air service.

The extraordinary way things seem to work together for our good appears to justify what Mr. Kipling called "Faith in our land's long-suffering star." Still one cannot help saying "I told you so," when one sees the present feverish rush for aeroplanes, and remembers all that has been written by various people in this paper during the past three years on the subject of the need for a strong and healthy aeroplane industry. If there really is a special guardian angel seconded from regimental duty with the Heavenly Host to look after the interests of this country his patience must have been tried rather high during the last couple of years, even though we manage to make a fairly good showing now. Our guardian angel always appears to me somewhat in the guise of an adjutant of Territorials—simply heart-broken with disappointment ninety-nine per cent. of his time, with a one per cent. consolation when things reach a climax, and his charge performs with unexpected credit. Taking it all round, the British people are not doing badly just at present.

Incidentally, and talking of guardian angels, I hope we shall have less than usual of religious cant in this affair. The Germans, the simple-minded, honest peasants and workpeople belonging to those who are serving in the ranks, are sure that their cause is just, and pray with quite as much faith to the God of Battles to give victory to their arms as do the people of this country. This must make it rather difficult for the Almighty to decide between so many faithful people on opposite sides, so it seems more rational to pray simply and whole-heartedly for Peace, and leave God to decide for Himself who is in the right.

A Plea for More Light.

There is, however, one thing of vast importance to the country at the present moment, which is sadly in need of improvement, and that is the Official Press Bureau, or whatever it calls itself,—I mean the establishment over which the brothers Smith—F. E. and Harold—are understood to preside. We are told that the staff is composed chiefly of naval and military officers, and one cannot imagine anything less likely to work properly than a service staff managed by politicians. One has only to recall the days when Colonel Seely tried to run the Royal Flying Corps himself, and before his finger was extracted from the pie by sheer pressure of public opinion, to realise how impossible such a combination is. If one had at the Official Bureau a staff of civilian journalists in two departments, one under the thumb of a military officer for news of the Army, and the other under a sailor for Naval news, much good might be done. Those

who are old enough will recollect how admirably the press worked in South Africa under the control of that officer who is better known to the readers of this paper as Brigadier-General Sir David Henderson, K.C.B., Director-General of Military Aeronautics.

Up to the present I have had no occasion to call on the Official Bureau for information, so I write purely as a member of the general public, keenly interested in the doings of our troops, and in the defence of this country against possible attack, and I observe the effects of the Official Bureau without knowing anything of its internal affairs, whereas I do happen to know a little of the internal affairs of the Services.

Under these circumstances I venture to point out certain ways in which the public mind might be set at ease,—for at present there is undeniably a feeling of uneasiness. It is, of course, absolutely imperative for strategic reasons, that the actual position of our troops should not be disclosed, for such information might give the German General Staff a clue to movements which their spies or air scouts had managed to miss. As this paper is actually going to press we have been told something of the movements of our Army, but we have not really been told as much as any purchaser of a French newspaper learned ten days ago. It is highly probable that the information given in the French papers of the 8th, 9th, and 10th of August was very largely wrong, but I do say most emphatically that if the same information had been published in the British Press it would have been very cheering to the people of this country, and it could not have conveyed any information to Germany which was not already known through German spies,—unless, of course, the German spy system is as bad as is their statesmanship,—which is hardly likely.

As it is, the British Public, tired of the contradictory reports published of the doings of Belgian, French and German troops, is going out of its way to look for rumours of what has happened to our men, and apparently verbal reports get about as quickly as a "War Speeshul" in the hands of a mob of raucous newsboys. When, on top of these rumours, which are always rumours of evil happenings, the Official Bureau breaks its silence about British troops with a warning that we must not expect immediate success, but must be prepared for evil tidings, can one blame people for developing nerves?

As one who has studied the psychology of the English to some effect, I submit that this is the wrong way of setting to work. Silence as to the movements of troops is well. It is the "Kitchener way," and it is good. But it is possible to say a lot and tell nothing, and that is the method which, I submit, the Official Bureau should adopt. At present the Bureau seems to be reproducing the Kitchener way much as Von Bethmann-Holwegg and Co. have been imitating the methods of Bismarck. The Englishman can stand a blow—no one fell into a panic over the sinking of the "Amphion," and those who knew and loved the men who died bore the blow as the Service should. But the Englishman cannot stand being worried. Worry breaks his nerve quicker than anything else, a shock pulls him together and brings out what good there is in him.

Therefore, if there is bad news, let us have it at once. It will be cheaper in the end. If there is no news, then let us have news of sorts. Surely at this date there can be no

harm in telling graphically how the Expeditionary Force was moved, without telling whence or whither it was moved.

The Mobilisation Staff may well be proud of its work, and the spirit of the British People would be raised on hearing how perfectly everything went through. The story of the long troop-trains, silently and at midnight packed with men in out-of-the-way sidings, and speeding unlighted through the sleeping country-side to unknown destinations; the streams of motor busses rumbling in the small hours through peaceful villages; the fleets of transports which were assembled at certain ports, and put forth empty in broad daylight, returning thereto, still empty, a day or two later, having done their country's work in the interim; even such things as show a defect here and there, such as the surprise of the early traveller along the road next morning at finding here and there a disconsolate bus-driver left behind by the rest of his squadron, trying to patch up some broken part in his machinery; or the humour of the transport lorry discovered by the villagers in the local duck-pond, whither it had wandered in the fog of dawn; all these things are worth telling. They rouse the interest of the man by the roadside and show him that he also, and the man next door, have a part in their country's work. They tell the enemy nothing, except that the whole nation has done its best in the war against him.

How Rumour Might be Treated.

Even the rumours which circulate from lip to lip might be turned to advantage by an official bureau with ideas. I gather that I may be tried by court-martial if I publish rumours calculated to cause panic among the populace—or words to that effect—so let me premise that all my supposed rumours are pure inventions. Suppose, for example, that a rumour is circulated that the Naval Lunatic Asylum at Yarmouth is full (which it is not) of men driven mad by the crash of big guns in a fleet action in the North Sea, an action of which news has been purposely withheld. (It has not taken place, so news has not been withheld). Why not publish the rumour with the official explanation that there must be a certain percentage of mental cases in any community, and that the enormous size of the Fleet now in being accounts easily for the extra numbers in the Asylum apart from the fact that the excitement of mobilisation and target practice with big guns may have thrown a few extra men off their mental balance for the time being? Would not the Public be consoled, and even uplifted, by the idea of such a huge Fleet?

Suppose a rumour gets about that a number of wounded Germans have been landed at Londonderry, which proves that an action has been fought off Inishrahull. People who have seen them (I am still inventing) know they were wounded, so there must have been fighting. What is the official explanation? Simply that a silly skipper of a German steam trawler refused to stop when hailed by a coast-patrol torpedo-boat, and carried on after the first shot across his bows, with the result that another shot sank him and wounded some of his men. Is it not satisfactory that even the remote Northern coast of Ireland should be so well patrolled?

Again, suppose a story goes the rounds that an Englishman in Belgium spoke to a German prisoner who expressed his surprise that Belgian soldiers should wear kilts, and that the story grows into a rumour that our Highland regiments are defending Liège,—that is how rumours originate. Is it unreasonable to suppose that the German may have seen in Brussels an officer of a Highland regiment sent there on some special staff duty? Such an explanation shows how closely our Headquarters Staff is keeping in touch with the Belgian and French Staffs, and it calms the British taxpayer to know it.

Of course, some rumours are obviously pure inventions, as, for example, a story which was told me with a wealth of evidence to the effect that a certain battalion of the Brigade of Guards had suffered severely in action—never mind where. And next day I saw the same battalion in England.

Interest the People.

Then again the public mind is disturbed by warlike preparations near home. Foolish people see Territorials digging trenches for practice and assume that a German attack on London is expected in five minutes. In such cases,

the Official Bureau might ladle out much interesting information. The present moment, when the national purse is open, seems a good one in which to carry out a certain amount of elementary fortification work which ought to have been done thirty years ago. If such work is done on the quiet, the local people see it being done and the story goes round that the Government expects a German invasion in force, and people begin to panic.

Suppose now the War Office chose to fortify Primrose Hill—they do not, because it is inside London and therefore useless, but suppose they did,—the Official Bureau might well explain why it was being done, and the Londoner, instead of being in a panic, would throw a chest and would think no end of himself as a citizen of a fortified place. One notices that people from walled cities, like Chester, for example, always put on an air of superiority over those from mere open commercial cities such as Liverpool.

Or suppose the Admiralty was pleased to mount a couple of high-angle quick-firers on the dome of St. Paul's as a guard against a possible raid by German aircraft,—they won't because it would fall in if they did. People in the City would never sleep these hot afternoons for fear of something happening, and if a gun was fired to test its mountings,—such things are done sometimes,—it would cause a run on the Bank of England (or on the Tube stations) in the belief that the Germans were overhead. Yet if the Official Bureau published a graphic description of the guns, and of the altitude records and the directional stability of their projectiles, everyone would be pleased at having such wonderful defence. And if it was announced that they would be fired every day at 6 p.m., everyone would turn out of the offices at 5.45 p.m. to see them do it,—a most effective early-closing arrangement. Then, if ever they were fired in earnest no one would be alarmed, except perhaps someone in East Ham, who received the falling shrapnel bullets, or a dismembered airship.

Or suppose the War Office chose to raise a Territorial Flying Corps, with headquarters at Hendon,—(they might, but they probably will not). Unexplained aeroplanes flying round London might raise a panic, but if the Official Bureau announced that test flights of the various squadrons would take place on Thursdays and Saturdays over certain routes, people would turn out to see them as if for an Aerial Derby, and the "gate" at Hendon might even pay for the upkeep of the Corps.

Window-dressing is not much use if one does not describe the goods in legible characters for the edification of one's customers and the annoyance of one's competitors.

The General Position.

As regards the general position of affairs, it is not good that anyone outside the General Staff should know what is going on, but the Official Bureau might do much to keep the people in the right humour to accept occasional defeat and ultimate victory. At present it appears to me that it is acting like a politician of the Colonel Seely type, in trying to talk down to an audience which only exists in its own imagination. The real people want a more solid diet than mere words that mean nothing in particular. The people who have to see this war through and pay the bill are not of the same kind as those who gaze open-mouthed at the platform of a politician who happens to be in favour with the half-penny Press.

Incidentally, the half-penny Press, and the penny Press to some extent, makes the same mistake of under-rating its public. People do not want two or three columns of big-type announcements of apochryphal victories with the rest of the paper full of the same news in scrappy telegrams of doubtful authenticity, the same material running to a dozen editions a day, merely differently disposed. They want plain, dignified statements of facts, as near as the facts are known, and they would like well-written descriptions of the troops at work, at home and abroad,—not unutterable slop about "A Soldier Prince's First Day in Barracks,"—an insult to a fine young sportsman and to the British Public.

Also, the papers are always telling us that the best way of helping our country is to go about our business in our usual

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way. Let the papers set the example, instead of filling themselves with scare-line war news. Let them return to chronicling the gramophone war at Ealing, if they cannot do any better, but there is heaps of interesting "copy" on naval and military subjects to be had which is not scare-line stuff. It is said that a people has the newspapers it deserves. If so, Heaven help England. Anyhow, one can now buy the French papers again, which is some comfort.

All this has nothing directly to do with aeroplanes, but I trust I may be forgiven on this occasion. It may, however, react indirectly, in that if any support is given to my plea for better information as to the doings of our troops we shall then have some news of the Royal Flying Corps. I am not at liberty to say whither, when, whence, or to whom they have gone, but so far as I can gather from various sources, official and otherwise, all was well with them up to Thursday last, and if ever one is permitted to publish an account of their recent doings it will increase the confidence one has in that small but efficient corps.

The International Situation.

As to the International situation, serious as it is, one need not feel unduly anxious, though we shall probably have to face losses compared with which the Boer War losses were as nothing. One can only hope that those who have to go

The Spy Who Was Not.

If one starts to talk over any war with a man who has been through it one always finds that what he remembers best are the humorous happenings. It is one of Nature's compensations that humanity forgets pain quicker than anything else. Therefore let it not be put down to a frivolous mind, or to lack of appreciation of the seriousness of the position, if from time to time I put on record the lighter side of the present campaign. The other day I came across an incident which deserves to be told. It was one of those things that simply had to happen, and it might easily have resulted in tragedy instead of comedy.

As everybody knows, the Naval Air Service owns a couple of D.F.W. biplanes, one bought originally as an experiment, which have turned out to be excellent long-distance fliers—vide a certain non-stop flight from Plymouth to Grimsby. These machines are obviously the most German of the Germans in general design, and I have been wondering how long it would be before some military genius who had seen pictures of German aeroplanes would mistake one of them for an invader.

Some few days ago, one of the D.F.W.'s flying across country came down at a certain town occupied by troops. Fortunately it was allowed to land peacefully on the local race-course without being fired at. The pilot was promptly arrested by the regular troops, despite his uniform, and his obviously English speech, and lodged in the local police cells. After a slight delay he was able to establish his identity and was promptly released.

Meantime, a civilian aviator, who knew the machine quite well and had seen it descend, discovered the whereabouts of the pilot, and went back with him to the machine to assist him in starting off again on his journey. On arriving at the field, they found that the regular troops had gone back to the town and that a company of very raw Territorials had discovered the deserted machine on their own account. Seeing the German name on it, and having no knowledge of the Admiralty number on the rudder, they lay in wait for the supposed German pilot on his return, so that when our two friends turned up they were both arrested.

The pilot was promptly disarmed by the Territorial officer, and the two were surrounded by half a dozen privates, whose idea of standing guard seemed to be to point their loaded rifles at full cock direct at their prisoners' chests at a distance of six inches, with their fingers trembling on the triggers. There the prisoners had to stand till word was sent into the town, and a regular officer who had dealt with the previous arrest arrived to vouch for the pilot's respectability. Then, and not till then, did the two victims dare to draw a really deep breath and shift into a comfortable position, for every movement previously had been followed by

out will have the satisfaction of doing so in action, and not from disease in hospital. Probably our end of the war will be over fairly quickly. It may be finished quite suddenly by a revolution in Germany, and I fully expect, with Mr. H. G. Wells, that inside a year we shall be protecting Germany against Russia.

A friend of mine from America summed up the whole affair graphically, if apparently frivolously, the other day with an anecdote of an Irishman who, going into a bar in New York, found two men rolling on the floor, fighting and biting and kicking and scratching. The Irishman leaned across the bar and remarked, "Say, bar-keep! Is this a private fight, or can annybody jine in?" So far, the ostensibly private fight between Austria and Serbia has resulted in five others joining in, and I can hardly see how the other Balkan States, as well as Holland, Denmark, and Italy, are going to keep out. Apparently Germany has forgotten to send ultimata to Spain, or to Prince Albert of Monaco, or to the Republic of Andorra, but possibly the supply of ultimatum forms has given out. Still, bad as it is for the individual, the war may be good for us as a nation, in that it may harden our fibre, and pull us together. Meantime America will do the world's shop-keeping and take all the profits.—C. G. G.

the muzzles of the Territorials' rifles, and anything sudden would certainly have resulted in their going off. I gather that thereafter that Territorial officer received quite a heart-searching lecture on the way in which a private soldier should properly stand guard over a prisoner.

If incidents of this sort are to occur it really seems necessary to circulate among troops of all kinds a description and photographs of the varied and assorted units of our air fleet, for an R.E. with an Austro-Daimler engine, or a Sopwith with a Green engine, is by no means unlike the new Albatros, and Rumpler, and L.V.G., and D.F.W. at a little distance, and the wings of Mr. Ding's Handley Page biplane would be enough to get him shot at sight. Even after he has alighted, a wild, untutored Territorial might condemn a pilot on the strength of the word "Austro" on an engine.

It is now perfectly obvious that orders must have been issued since this episode that no aeroplane of any kind is to be fired on, unless it commits some overt act of hostility, and the same order has doubtless been given as to airships, except it should so happen that some knowledgeable person in authority should recognise a genuine Zeppelin, for in such case there can be no doubt as to its nationality.

Royal Flying Corps' Families Relief Fund.

The following letter has been received:—"The Aerial League of the British Empire propose, with the concurrence of Brigadier-General Sir David Henderson, K.C.B., D.S.O., and Captain M. T. Sueter, R.N., C.B., to give such help as may be possible to the wives and children of the Petty-Officers, Non-Commissioned Officers and men of the Naval and Military Wings of the Royal Flying Corps, who are about to proceed on active service.

"Everyone must admire the devotion which these men display in carrying out their onerous and arduous duty, and it would be a source of great comfort to them and relieve them of much anxiety if they knew that their wives and children would be well looked after during their absence.

"The Aerial League, therefore, appeal for funds to enable them to carry out this object, and they feel confident that they will not appeal in vain. The Fund will in no way clash with the Prince of Wales' National Relief Fund because it is intended solely for the relief of families of the married men in the Royal Flying Corps who are on active service.

"Any sums, however small, will be most gratefully received, and will be acknowledged in the Press. Cheques or Post-Office orders may be sent either to the Hon Treasurer of the Aerial League, Windsor House, Kingsway, W.C., or to Messrs. Cox and Co., 16, Charing Cross, S.W., who have kindly consented to open an account to the credit of the Royal Flying Corps' Families Relief Fund.—I have the honour to be, Sir, your obedient servant, H. T. ARBUTHNOT, Major-General, Chairman of the Aerial League."

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In Germany on the Eve of War *(continued)*.

By W. E. de B. WHITTAKER.

There seems to be an abiding impression in this country that German pilots are clumsy and inapt. This impression was born of misunderstanding. Two years ago when the majority of German aeroplanes were bad copies of French types the number of disasters was very high. Day by day one heard of death after death on the different great aerodromes of Germany. No news came of any great flights and such Germans as appeared in flying competitions abroad only intensified the already strong idea that Germany was denied its due quota of heaven-sent aviators. Since those days all has changed. German method and German thoroughness has brought about new conditions. Now, as the German aeroplane is probably the most efficient in the world so does the German aviator hold a very high position in the world of aviation.

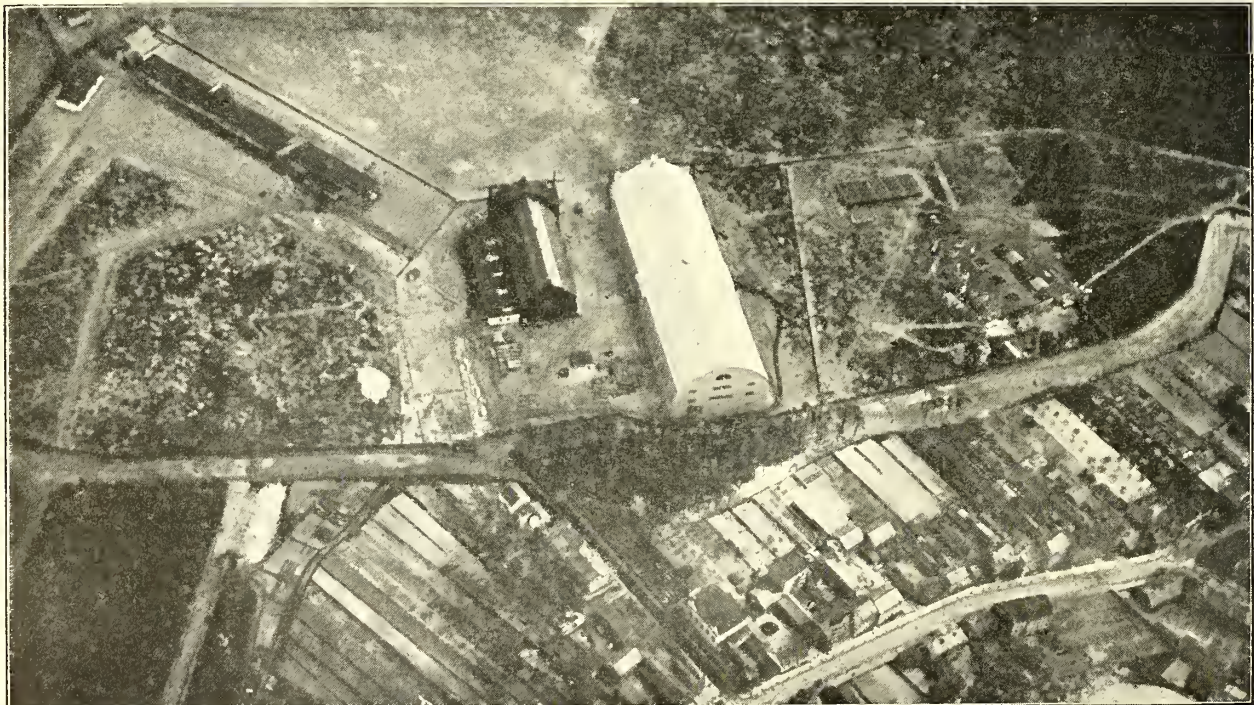
Such flying as I saw at Johannisthal was carried out by soldiers of no more than average skill as aviators are ranked in Germany yet they handled their machines in a highly practical manner. They appeared to take but little notice of the direction of the wind when leaving the ground. In landing they took no particular trouble to ensure smoothness of contact. The strength and efficiency of their machines made that unnecessary. One man I saw unbuckling his belt when thirty feet from the ground.

On Saturday, August 1st, we again went to Johannisthal from Potsdam, this time by car. We found sentries at every entrance to the ground both private and public. The soldier on duty at the Albatros gate said something comprehensive in German to us, but as we possessed but little of the language and that only in reference to the supply of petrol and the fitting of tyres we smiled sweetly, and taking advantage of his momentary amazed indecision we passed on into the works. There after considerable delay we finished such business as we had and were politely conducted outside the boundaries by the Works Manager. Here to our intense amazement and, at the time, amusement, we found the car under the charge of two soldiers armed and provisioned as for the longest campaign. We were not allowed to leave and so perforce sat in the car with the Works Manager, who was also placed under arrest. Here we remained for well

over an hour awaiting the arrival of an officer. No officer arrived and we thought regretfully of the meals we had not eaten. At six o'clock we were taken to a guard-room arranged in the open at the side of the Zeppelin shed. There we had a further wait without anything of interest to look at and none to talk with. Just as the sun was on the point of retiring to gild more civilised parts of the earth's surface we were placed in the charge of two plain clothes police who took us before the officer commanding the aerodrome. He cross-examined us as fully as he was able. Our past and future were laid bare before him and we felt sorry that he should have been so troubled. After a space he acknowledged us to be beyond his powers of discernment and handed us over to our friends of the police, who made us drive them to the Central Police Office, where amid the gloom of twilight and dinnerless hours we were again examined, this time by a civilian commissioner. After finding that we had lost most of our parents and had never assassinated a Tsar or knifed a picture in the National Portrait Gallery, he bid us go our way so long as it led us from Germany. We went. That night we stayed at an hotel in Berlin.

After a belated dinner we struggled through dense masses of people in the Unter den Linden and made our way to the British Embassy. Crowds swept along the streets singing the Hymn to the Austrian Emperor and the German National Anthem. Flags were waved and colours sported. Every officer who passed was cheered vociferously, and continuous applause was raised by the name of the Kaiser. We had never in our lives seen such things even in Naples or Mexico. The heart of the people was in war—just war or unjust war or any war so long as it was war.

At five in the morning (Sunday) we left Berlin, having bought enough petrol in the tank and in cans to last us until in the course of time we passed the frontier. And it was well that we did so, as in most places all petrol had been seized for Government use. Until we reached Brandenburg we had no trouble in any way either from the fates or the populace. Here, however, ill-luck befell us in that a tyre burst. The spare wheel was already out of action, so it became necessary to buy



JOHANNISTHAL FROM ABOVE.—The big Zeppelin shed in the centre. On its left the small airship shed is now the quarters of the military controlling the ground. On the right the Albatros offices, and on the extreme left the I.V.G. sheds.

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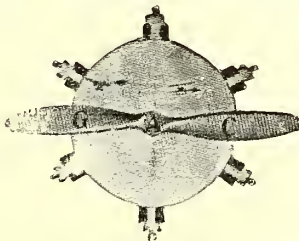
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MANCHESTER**

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

a new inner tube and use up the spare tyre. While we were trying to fit this in a tiny courtyard the police arrived and examined our papers at some length. Another weary description of our ancestry followed, and about one o'clock we were allowed to go, accompanied for the first two miles by a sergeant of police who, in addition to wearing a brilliant uniform, had lived in San Francisco during the earthquake. He spoke American with the verve and precision of a native. We were glad to leave Brandenburg as the crowd looked none too friendly. At Magdeburg we were again stopped on the bridge and made to demonstrate the innocency and inadequacy of our wardrobe in the full and baleful glare of the public eye. Here the suspicious roll of celluloid first attracted the trained eye of the suspicious police, who argued that as it was of the nature of a film and served no apparent use on the car it must be part of a photographic apparatus the rest of which we were wilfully concealing. However, my friend's somewhat incoherent and spasmodic German and my vivid gesticulations demonstrated the real use of the roll, and reluctantly we were despatched on our weary way.

So long as we continued without a stop no trouble came to us, but so soon as we missed our way and had to stop to inspect a signpost we were pounced on by a mob, the members of which would be armed with pitchforks, spades and, at the best, rifles dating from any year since Waterloo. At any moment any member of the crowd, however deeply he might be moved by the charm of our looks, might in a moment of excitement blow out such fragments of brain as we still possessed.

We passed through Brunswick and Hanover without trouble, though in the latter place the crowd looked very threatening. After Hanover we were stopped at almost every village, and in each case we were permitted to go on after our papers had been read by the padre or the shopkeeper. This constant nerve-wearing investigation reduced our average speed to about eight miles an hour, and instead of leaving Germany that night, we were only at Minden when dark fell. Here we went to the hotel Stadt London where we had stayed four days before. During dinner we sent for the police that our papers might be passed as we wished to leave again at three in the morning. An officer came and we saluted each other gravely but mutely, as since the Tower of Babel our roads had lain apart. He told us through the waiter that we could not leave until after eight in the morning. We were to apply to the Commandant for our papers before we left. We were put on our parole, and after the German manner our word was made secure by the imposition of a sentry during the night. In the morning we went to the police office. We were inspected by the Commandant who, after enquiring our business, got the fatal reply: "We came to Germany to buy an aeroplane." The reply which brought us trouble everywhere. Fearful for the security of Germany he told us to return to our hotel, where we were to remain under arrest until we received word from him. All the live-long day we waited in the hotel watching the troops leaving in thousands for the front, which in this case meant France. An officer came to us and he, among other things, told us that an hour or two before two Russians were shot as spies. The people were certainly unduly enraged against the Northern foe. The French they did not greatly dislike, and in the majority of cases the English were popular.

At four in the evening we were released and told to drive onwards out of Germany without stopping. As it was so late we intended to stay the night in Osnabrück, only forty miles away and about an equal distance from the frontier. Under ordinary conditions we should have reached that place at seven-thirty at the latest, but so disturbing was our drive that it was nearer ten when we finally reached our hotel. At each cross-road we stopped for a few moments, and in each village we had a long and trying wait. In some places the people were friendly, in some very much the reverse. In one small town the name "Rushmore" on the lamps raised great suspicion from its fancied resemblance to "Russia." However, we progressed with nothing more than mental discomfort until we reached Ollendorf, a large village some ten kilometres from Osnabrück. Here we successfully passed the first barricade, even though one individual with a pitchfork was strongly opposed to our passage. Further in the village we were again stopped. This time I was made to walk with the local police-

man to the Town Hall while my friend drove the car some way behind. I had almost reached sanctuary accompanied by a large and curious crowd when the man who had disliked us at the beginning arrived on a bicycle and purple with rage accused us of making plans of citadels and photographing the lie of the land. At once the crowd turned against me. There was an ugly rush, and I was as near experiencing the fate of De Witt as I shall ever be in this life. Before I was more than half throttled the policeman managed to get me into the Town Hall, where I could in comparative security listen to the howls of the mob outside. My friend for some inexplicable reason escaped the full wrath of the mob and was brought in quietly and without trouble. By great good luck it seemed that the Burgomaster was a man of discernment. He examined our luggage and car in public to allay suspicion, though I think that those villagers will believe until their dying day that we were two anarchists of Russian extraction. After an anxious hour we were allowed to drive away. At this place on the day before some Russians had been dragged from a car and shot on the spot.

We reached Osnabrück after dark and were taken to the military headquarters and then to the police office. While at the latter place we saw the arrival of about two hundred Russian workmen who had been placed under arrest at the opening of the war. Dejected and hopeless they moved miserably through a hissing and booing crowd to the prison which was to be their home until peace came again. Such is discipline in Germany that half a dozen police sufficed to keep the mob, ever ready to strike, at bay.

After a pleasant night at the Kaiserhof Hotel, where the land- lord possesses singular charm, we started on our last lap at eleven in the morning—August 2nd. With the usual series of interruptions from armed pickets we reached Rheine, the last big town in Germany. Here after a further rummage amongst the wreckage of our clothes, and further suspicious enquiries into the use of the roll of celluloid, we were directed to alter our course from that through Bentheim to a devious way through Burgsteinfurt, Ochtrup and Gronau to Enschede in Holland. The reason of this, so far as we could judge, was that they were massing troops on the Dutch frontier near Bentheim, and wanted to conceal the nature of the movement from us and the world. We saw trainload after trainload of soldiers passing through Osnabrück and Rheine for what could only be the Dutch frontier. We shall know perhaps in the course of a week or two. Should Germany attain success in Belgium she will certainly ignore the neutrality of Holland.

At length we reached Ochtrup. Here the most amazing thing of all happened:—We were identified by a chauffeur as having escaped from custody at Buckedorf, a town some miles on the Berlin side of Minden. Nothing could shake him in his accusation, and things looked unutterably black for us. Tempers are hasty when war is the common occupation, and sentences of death at the worst are only "regrettable mistakes" when too much haste has been used. It suddenly occurred to me that perhaps this man had seen us at Minden and had confused his story. I asked him and he at once admitted it. Then again the world smiled and we left Ochtrup.

At Gronau we found that the car must stay in Germany, and while we were making enquiries about trains and garages we were taken in charge by the Customs authorities and handed over to the police as dangerous characters. We were then brought before the Burgomaster who, with charming courtesy, again examined us. It seemed as though on this occasion we were indeed to be kept in Germany. Any minute England might declare war and then our chances would vanish entirely. However in the end the Burgomaster telephoned to the G.O.C. in Munster, putting our case as favourably as possible, and we were released. A local millowner who had given us every assistance garaged the car and undertook to take care of it. So did we part in perfect amity.

We crossed the frontier an hour later, after a long argument with the Dutch Customs officer, who thought us too dirty to be respectable.

All through our very trying week in Germany we received the utmost civility from the police and the troops, who had an unpleasant duty to carry out, and carried it out well. They would have shot us with equal courtesy, and the reflection was pleasant. The rest of our journey is without any interest.

Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," August 11th, 1914:—

Special Reserve of Officers: Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—The undermentioned gentlemen to be second lieutenants (on probation), dated August 12th, 1914: Mark Dawson, John G. Miller, James Valentine, Leonard Parker, Thomas F. Rutledge, Robert Loraine, and John R. Howett.

From the "London Gazette," August 14th:—

War Office, August 14th.—Regular Forces.—Establishments.

Royal Flying Corps (Military Wing).—The undermentioned appointments to take effect from June 30th, 1914: To be Flying Officers—*Captain Arthur B. Burdett, York and Lancaster Regiment; Captain Cyril F. De S. Murphy, Princess Charlotte of Wales's (Royal Berkshire Regiment); *Captain Alexander Ross-Hume, Cameronians (Scottish Rifles); *Captain Geoffrey H. Cox, 3rd Battalion Prince of Wales's (North Staffordshire Regiment); *Lieutenant Ian M. Bonham-Carter, Northumberland Fusiliers; *Lieutenant Dudley S. K. Crosbie, Princess Louise's (Argyll and Sutherland Highlanders); *Lieutenant Claud A. G. L. H. Farie, Highland Light Infantry; *Lieutenant Victor S. E. Lindop, Prince of Wales's Leinster Regiment (Royal Canadians); *Lieutenant Lord George Wellesley, Grenadier Guards; Lieutenant Charles G. G. Bayly, Royal Engineers; Lieutenant Thomas L. S. Holbrow, Royal Engineers; *Lieutenant Arthur S. Barratt, Royal Artillery; *Lieutenant Paul A. Broder, 5th Battalion Worcestershire Regiment; *Lieutenant Guy L. Cruikshank, 3rd Battalion Gordon Highlanders; *Second Lieutenant George J. Malcolm, Royal Artillery; and *Second Lieutenant Cuthbert E. C. Rabagliati, King's Own (Yorkshire Light Infantry). To the Reserve—Major Sir Bryan B. M. Leighton, Bt., Westmorland and Cumberland Yeomanry; Captain Thomas H. C. Frankland, Royal Dublin Fusiliers; and Lieutenant Frank B. Binney, Royal Artillery. *To be seconded.

Special Reserve of Officers.—Royal Flying Corps (Military Wing).—Second Lieutenant (on probation) Eric B. Baumann resigns his commission. Dated August 15th, 1914. The undermentioned to be Second Lieutenants (on probation), dated August 15th, 1914: Cadet Sergeant John Gordon Miller, from Edinburgh University Contingent Officers Training Corps, and Mark Dawson.

NAVAL.

Though it is not advisable to indicate the exact whereabouts of operations it may console nervous readers in London to know that Naval airships are keeping up a constant patrol in order to cover London against possible raids by air. Also practically the whole of the East Coast is regularly patrolled by aeroplanes much in the way indicated in this paper some weeks ago.

* * *

One gathers that Hendon is to become, at any rate for the time being, a Naval Air Station for the training of new pilots, and that the schools there, though operating in the usual way, will be under official surveillance.

MILITARY.

Their Majesties the King and Queen visited Aldershot on August 11th and inspected troops of the Expeditionary Force. Afterwards the King and Queen paid a visit to the Royal Flying Corps. His Majesty made a very close inspection of the aircraft and the personnel of the Naval Airship Section and of the R.F.C. (Military Wing).

* * *

Everybody connected with flying will learn with very deep regret of the death of General Sir James Grierson. Not only was General Grierson a soldier of the very finest type, beloved by officers and men, and a great strategist and tactician, but he was a firm believer in the utility of aircraft in war. None of those who were privileged to be present on that occasion will forget General Grierson's humorous but eminently practical remarks on military aviation, when he presided at a meeting of the Aeronautical Society at the Royal United Services Institution last winter. Not only has the British Army lost a magnificent leader, but aviation has lost an influential supporter.

Now that it is announced that the Expeditionary Force has crossed to the Continent it may be permissible to put on record that a considerable section of the Royal Flying Corps is with our forces. The first squadrons to cross were numbers 2, 3 and 4. A correspondent of this paper, then at Dover, states that he counted thirty-seven aeroplanes crossing the Channel during a couple of hours one morning towards the end of last week, and that the procession had been going on some time before he arrived and also continued for some time afterwards. Practically every pilot of these squadrons has flown across, and no doubt a number of reserve machines will proceed by air to the base, though in view of the number of machines that are likely to be turned out in the near future it is probable that a good many will be sent by transport as well.

* * *

Brooklands is now entirely under military control, the famous "Blue Bird" is to become the officers' mess, and will not be available for the public. Pupils joining the Bristol or Blériot schools will find little difficulty in obtaining good lodging in the neighbourhood.

* * *

Private Robertson, of the Royal West Surrey Regiment (Special Reserve), while guarding the sheds at Brooklands early on Sunday morning, was shot by a supposed spy. Robertson stated that he challenged the man three times and then fired. The man immediately returned the fire, breaking Robertson's right arm with a heavy revolver bullet. The aerodrome was searched without success. One ventures to suggest that sentries and guards in Great Britain would be more effective if armed with weapons using heavy bullets, or even with fowling-pieces using buck-shot. A perturbed sentry is not likely to hit a running man with a Lee-Enfield, whereas a charge of buck-shot would probably bring him down. Also, a Lee-Enfield bullet has a range of something like 2 miles, and may possibly hit anyone within that distance.

* * *

The supply of aero engines in this country has been considerably augmented during the past week or so by the loyal support of the various French firms. A further large consignment of Gnomes, in addition to those mentioned last week, has arrived, and a quantity of Salmsons and Renaults are also expected, if not already delivered.

FRANCE.

A correspondent in France who is closely concerned with military aviation, writing on Monday, August 10th, says that all the best civilian aviators were then at St. Cyr. These included MM. Garros, Chevillard, Pourpe, Verrier, Pégoud, Gilbert, Garaix, Noel, Bonnier, and other well-known French pilots. There were altogether about 300 civilian pilots ready for service, and equipped with good, new machines. In addition to these, some 350 officer-pilots of the French army were on the eastern frontier with the troops, and the civilians at St. Cyr were waiting for instructions to start by air for the east. One section of 30 of the best pilots are intended to fly over the enemy with observers, and the rest will maintain communication between the various divisions and army corps.

This correspondent desires THE AEROPLANE to point out that it is necessary for military aviators to fly at a height of at least 8,000 feet. One of the captains of the French Flying Corps told him that one military aeroplane returning from Mulhouse at 2,000 metres (about 6,500 feet) was hit by German shrapnel and that more than 200 holes were found in the machine when it landed. In the clear air of France one can see better from 8,000 feet than in this country from 4,000 feet.

The French aviators were also told that in the event of being captured by the Germans they would be shot without pity. Our correspondent says, "Everybody is enthusiastic here and impatient to go, and we are absolutely sure of victory with the help of the English."

It is understood that a large number of Maurice Farman biplanes are being delivered direct from the French factory by air to the British Army, wherever it may happen to be.

One learns that M. Jullerot, the famous Bristol pilot, is now on service with a cavalry regiment in the East of France. One wishes him a safe return to his former duties.

Among the civilian aviators already at Dijon are Messrs. Alfred Leblanc, Daucourt, and Brindejonc des Moulinais.

A recent arrival from France reports as follows:—

"Mr. Oswald Watt has been definitely accepted for service in the French Flying Corps, and will fly his own machine, a Blériot of the latest type.

"The Blériot Co. have built a scout biplane under Sopwith licence, and it was recently taken out for test by Pégoud, who smashed it badly at the first flight. It is to be rebuilt again with a considerably altered chassis and several other modifications. M. Blériot has also produced a very successful monoplane of the monocoque type, fitted with an 80-h.p. Gnome. It is a two-seater arranged with the pilot behind, and on test has attained a speed of 150 kms. (90 miles) per hour.

"The Farman Brothers also have produced a tractor scout somewhat resembling the Sopwith, but it has not yet been tested. It is said that the whole stock of Maurice Farmans have been sold to the French Government, and no more are to be built, the Farman Brothers devoting themselves to the new tractor type instead."

The "Pall Mall" reports that a French aeroplane engaged in reconnoitring in Lorraine was pursued by two German aeroplanes. The German machines were faster than the French machine, and were manned by three soldiers armed with magazine rifles. [This seems exceedingly unlikely. The Germans are not known to possess any four-seaters. Possibly each machine carried an armed passenger.—Ed.] The French aviator was nevertheless able to escape from the pursuit and regain the French ranks without accident.

The "Times" Paris correspondent wired on the 14th:—"Occasional news trickles through from the frontier in private letters from soldiers. One of these describes the destruction of a German Zeppelin near Nancy. Some surprise has been expressed that more has not been heard of these formidable airships since the beginning of the war. The destruction of the one mentioned in the letter, and of another which was reported to have occurred outside Liège, may have discouraged the Germans from using them further for reconnaissance work over ground occupied by the French. It was on Saturday, August 8th, according to the letter, that this Zeppelin appeared above the frontier not far from Nancy. Perrin, one of the airmen of the Nancy garrison, immediately went up to attack it. He succeeded in outmanœuvring it without difficulty, and dropped two bombs upon it from above. The airship was utterly destroyed and a mass of shattered wreckage fell near the little town of Château Salins, in German territory."

[If these reports are true, then two of the eleven available Zeppelins are accounted for, and one may assume that these are two of the best and fastest. It seems unlikely that Zeppelins will be used in future over troops, and it is more likely that they will be reserved for raids at night over camps and towns. Meantime, one may rest assured that one of the first objects of the French aeroplane pilots, as their army advances, will be to destroy all sheds which may house airships.]

The "Times" correspondent continues:—"French military airmen have gained several successes lately, one of which is particularly brilliant. In the neighbourhood of Woevres a German airman risked a flight above our troops at a height of about 2,500 ft. The troops at once opened fire and soon found their mark. The engine of the aeroplane was hit and the machine began to drop. In spite of desperate efforts by the pilot and his passenger, they were obliged to come to earth and were immediately taken prisoners.

"Again, a French aeroplane yesterday encountered an enemy. The French pilot gave chase, firing with a Browning pistol, but the German—without attempting to retaliate—fled and escaped.

"At Woel, in the Canton of Fresnes, a German airman dropped two bombs among our troops without hitting anyone."

A French official communiqué of Thursday last announced that a German aeroplane, flying the French flag, was sighted that morning over Vesoul, some 35 miles to the west of Belfort, and later over Lure, about 20 miles to the north-west of Belfort. Three bombs were dropped over the station at

Vesoul, and two over Lure station. The damage done, however, was of but little importance, and the hostile aircraft was finally driven off by the gendarmes guarding the railway lines.

M. Desgranges stated on Thursday that aviators were doing incalculable service to the French army.

The "Times" stated on August 16th that two French aviators have, according to an official communiqué from the French War Office, performed a magnificent exploit over Metz. Lieut. Cesari and Corporal Prudhomme left Verdun alone on aeroplanes on Friday evening, at 5.30, charged with a mission to reconnoitre and destroy if possible the sheds of dirigibles at Metz. The two airmen flew over the line of forts, the lieutenant at 2,700 metres high and the corporal at 2,200. They were received by a continuous cannonade. In the midst of a cloud of bursting projectiles they kept on their way, but a little before arriving above the parade-ground the lieutenant's motor suddenly stopped. Determined not to descend without having fulfilled the work assigned to him, the airman proceeded to vol-plané, and it was in planing down that he launched his projectile with marvellous coolness. A little later his motor restarted. The corporal also dropped a bomb from his machine. In the smoke of the enemy's projectiles it was difficult to see whether the bombs carried, but the lieutenant believed that he attained his mark.

The German artillery continued to roar, and this concert accompanied the airmen during six or seven miles. Hundreds of shells were fired at them, but they returned to headquarters safe and sound. The two men have been mentioned in an Army Order of the day.

The "Morning Post" of Tuesday reports that a French aviator was compelled to land through want of petrol in a village in the annexed provinces. He was filling his reservoir when a strong patrol of Germans suddenly appeared. The officer quietly went on emptying his petrol tins. The Germans, astonished at his calmness, stopped a hundred yards off without firing, fearing, perhaps, some ambush. Having filled his reservoir the aviator started his motor, jumped into his seat, and set off. Then, too late, the Germans fired a volley at him, but without effect, and the aviator and his machine returned to French territory unscathed.

[A tall story, but possible. Though one would like to know how he started his motor himself.—Ed.]

The "Morning Post" reports that a German aeroplane attempted to conduct a reconnaissance over Givet on Monday. Fire was opened upon it, and it was brought down at Hastières.

GERMANY.

Dread of the French aeroplanes and their bomb-dropping capabilities is very lively on the German side of the Rhine. The "New York Herald's" correspondent reports that at Mayence the machine-guns were hard at work all one night shooting at the stars, which were taken for the lights of an enemy's flying machine as they emerged from behind the clouds.

It is stated by the "Star" that at Cologne and other large cities the church towers have been fitted up as guard stations to watch for aeroplanes, and light guns now point to the skies side by side with the steeples. At night Cologne is plunged into darkness. All the street lights and the domestic lights are extinguished, but the sky is lit up by the rays of innumerable powerful searchlights. The fear of an attack by French airmen is said to fill the population with nervous dread.

The "Globe" states that a message received from Rormond, in Holland, gives a curious story of the alleged capture of an English aviator by Germans. It is stated that an aeroplane was observed on the 11th near Thorn, flying towards the German frontier. It was later brought down by gunfire by German frontier guards near Arsbeck. When picked up the aviator, who had been wounded in the leg, was found to be an Englishman. His aeroplane, which was armour-plated, was uninjured. The aviator is now a prisoner and has been taken to Rheydt.

BELGIUM.

The "Patriote" announced from Brussels on Friday that on the previous afternoon three German aeroplanes flying over Diest were brought down by the Belgian artillery. Two of the aviators were dashed to pieces and the third sustained terrible injuries.

The "Times" correspondent at Namur, wiring on the 13th,

said: "Just before I reached the town, after getting within the fortifications, some soldiers of the 10th Regiment of the line pointed out a German aeroplane which for the third day in succession was passing over the same line of country. It was flying at a great height, and I doubt very much whether the observer it carried could have taken away with him any new information worth having."

An order has been issued warning the Civic Guard not to fire at aeroplanes flying at a great height, as it is impossible to distinguish their nationality. Some Belgian machines have been damaged by bullets from their own countrymen.

The "Times" correspondent at Brussels wired on the 14th:—"While I was in Namur this evening at 6.30 three bombs were dropped from a German aeroplane. The first caused no damage, but the second wounded five men, three of them seriously. The third fell on the pavement of the Omalius Bridge. I was myself only about 300 yards away at the time. One of the victims had the lower part of both legs horribly mangled, blood and bits of clothing and flesh being scattered in all directions. The inhabitants of Namur are very indignant at this outrage against a town which is not in a state of siege."

[Presumably, as Namur is a fortified place, such an attack does not infringe the rules of war.—Ed.]

The "Times" remarks, apropos the difficulty of hitting aeroplanes:—"This difficulty was exemplified in a striking fashion when two Belgian airmen rose above the City of Liège and flew back over the western forts. Both German and Belgian batteries opened fire—the latter, of course, acting under a misapprehension. The shells did not reach the machine, happily, but they burst just below it, and the shock was so great that the aeroplane rocked about giddily like a ship in a storm. The experience was described by the airmen as absolutely nerve-racking—the most appalling which the imagination could conjure up. Another Belgian airman flew over the German lines and returned in safety. He was subjected to a heavy fire, but the shots went wide, even while he was within range. He remarked coolly on landing, 'These Germans do shoot badly.'"

The "Times" reports that on August 11th a German monoplane flew over Brussels at a great height. The aeroplane had made several flights, traversing Belgium by Louvain, Brussels, and Antwerp. Attempts to bring it down with the fire of machine-guns failed. The well-known Belgian airman, Ollieslagers, made an unsuccessful endeavour to tackle it.

It was reported on August 12th that German aeroplanes continued to reconnoitre in the vicinity of Brussels and that Belgian aviators had several times flown over bodies of German troops, and had made flights even as far as the German frontier.

Two German aviators who were flying over Namur on Wednesday 12th were brought down by fire from the forts of Malonne and Suarlee. Both were wounded and are now prisoners.

A German aeroplane flew over Brussels on August 11th. Shots were fired, but it was not hit.

A new German aeroplane, containing two officers, has been captured near Bouillon. The pilot was wounded.

A Belgian military aviator was flying over Wierck Plain on Friday when the motor of his machine broke down, and the aeroplane began to drop. The fall was broken by telegraph wires and the aviator escaped with a few scratches. Reuter reports that two children were fatally injured.

The "Times" correspondent in Brussels states that on the 15th a German pilot on a Taube monoplane came over the Belgian troops at a height which was apparently well within rifle-range, and some hundred men fired at him. The wings of the aeroplane, according to those who observed the results of the attack through glasses, were repeatedly pierced, but the pilot, who at the first volley rapidly mounted, got away. The only aeroplane gun at the particular point was unmounted at the moment, but with remarkable coolness an officer immediately picked up the mitrailleuse and held it over his shoulder, while a brother officer directed and fired it. One presumes that the gun was of the light Lewis type, and not of the water-cooled variety, otherwise one man could scarcely hold it.

The following story was published by various papers on August 17th:—

Two Belgian aviators returning to headquarters had to land, owing to a breakdown, in the neighbourhood of some Uhlans. The aviators found they could not repair the machine, so they slipped away and regained the Belgian lines, and the aeroplane was given up as lost.

Two days later it was ascertained that it was still at the same place, guarded by Uhlans. A party at once set out with an 80-h.p. motor with a quickfiring on it, and dragging a trolley. The party came up to the spot at great speed, and surprised and drove off the Uhlans, afterwards keeping them at bay with the quickfiring while the aeroplane was dismantled and put on the trolley. The convoy then drove off.

RUSSIA.

A Vilna message received at Petersburg on Friday described how German aeroplanes have been attempting to make reconnaissances over the area in which the Russian troops are operating. An aeroplane was damaged and brought down in the Suwalki Government. The bodies of four German officers were found in it.

[This is probably a pure fabrication. The Germans do not use four-seaters, such a number of occupants being quite unnecessary in machines of present sizes.—Ed.]

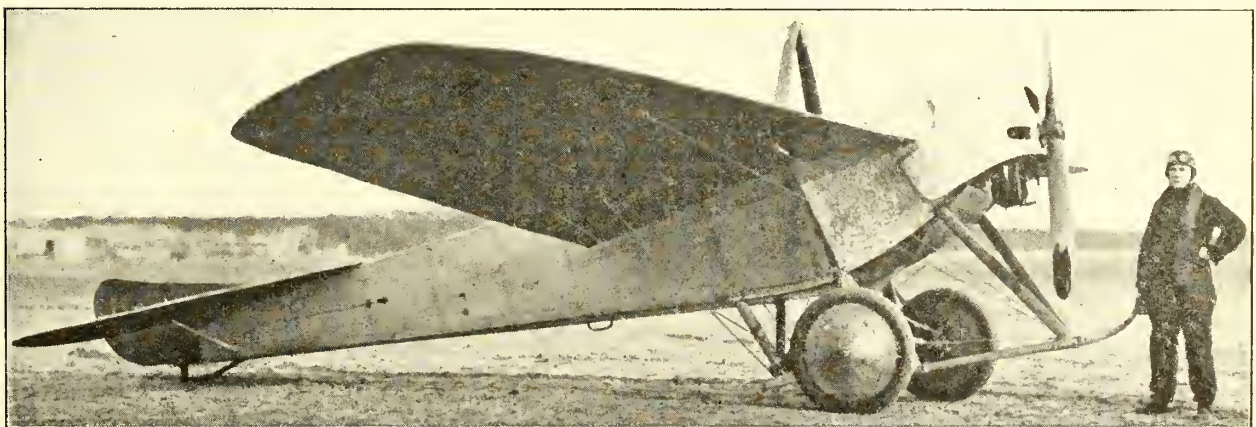
HOLLAND.

A telegram to the "Handelsblad" on Friday from the Island of Schiermonnikoog, near the German frontier, states that two German naval aviation officers, who started on a flight from Borkum that morning, were obliged to descend on the beach at Schiermonnikoog owing to engine trouble. The two officers were disarmed and interned.

The "Times" correspondent at Amsterdam reported that an airship, apparently German, was seen flying above the North Sea for some time near the Island of Terschelling, and finally disappeared in an easterly direction, on the 13th.

DENMARK.

In these days of war, Prince Axel of Denmark, Lieutenants



The latest type L.V.G. monoplane, with the crack pilot Herr Kulisch. The machine is very like a Nieuport.

Hoeck and Laub have made reconnoitring flights on the two F.B.A. flying-boats. On one of these flights, when Prince Axel and Lieutenant Hoeck would start after a stop, the motor fell down on the boat and smashed it, so that they must swim to land.

On August 1st (Saturday) a German hydro-aeroplane, without the knowing of its two officers, flew over the Danish frontier. They landed, and after an examination they were allowed to fly home.

The Caudron biplane (60-h.p. Le Rhone motor) on which Chanteloup made his looping demonstrations in Denmark and Norway, which has rested at Christiania, has been presented to the Danish Army by a millionaire.

Almost every day aeroplanes and waterplanes are seen over the German frontier, and to-day (August 13) the Zeppelin Naval Airship L III arrived at Esbjerg, where it dipped the colours with the light-ship. It is stationed at Heligoland, where big Naval manœuvres have taken place to-day.

A voluntary aviation corps has been formed by the young Danish aviator Pollner; it consists of young polytechnics who are busy engaged building aeroplanes for the Army; the corps has been presented with a 80-h.p. monoplane Gnome by the Navy through Prince Axel.—Ht.

SWEDEN.

Baron Cederström, the first Swedish aviator, recently tested the first Farman biplane built in Sweden, and thereafter presented it to the Swedish Army.

All the army and naval aeroplanes had had accidents, and the officers had been returned to their former regiments and ships, and aviation was in a bad position when war began.

The Government tried to buy twenty aeroplanes in Germany, Russia and Denmark, but only succeeded to buy the 100-h.p. Mercédès-Albatros biplane on which Wieland and Pollner made the flight Berlin-Copenhagen-Stockholm for the fair price of £2,500.—Ht.

NORWAY.

The Government has bought the Blériot monoplane on which Lieut. Trygve Gran flew over the North Sea, and Gran himself has been appointed Captain of the Reserve.

Roald Amundsen has given his Maurice Farman biplane to the Government and offered his own service as an aviator.—Ht.

Sabotage.

The Avro biplane and Blackburn monoplane, belonging to Mr. Harold Blackburn, which have recently been taken over by the Government, had a narrow escape from destruction last week at Harrogate. The night watchman in charge of the tent where the machines were stored suddenly awoke to the fact that the place was on fire. In some extraordinary way he got them out of the tent and saved them undamaged. It is reported that the machines themselves had had petrol poured over them, though fortunately they did not catch fire. The outrage is locally attributed to German waiters at one or other of the big hotels, though it might almost equally have been committed by some personal enemy of the aviator's, who knew that the blame would be put on German agents.

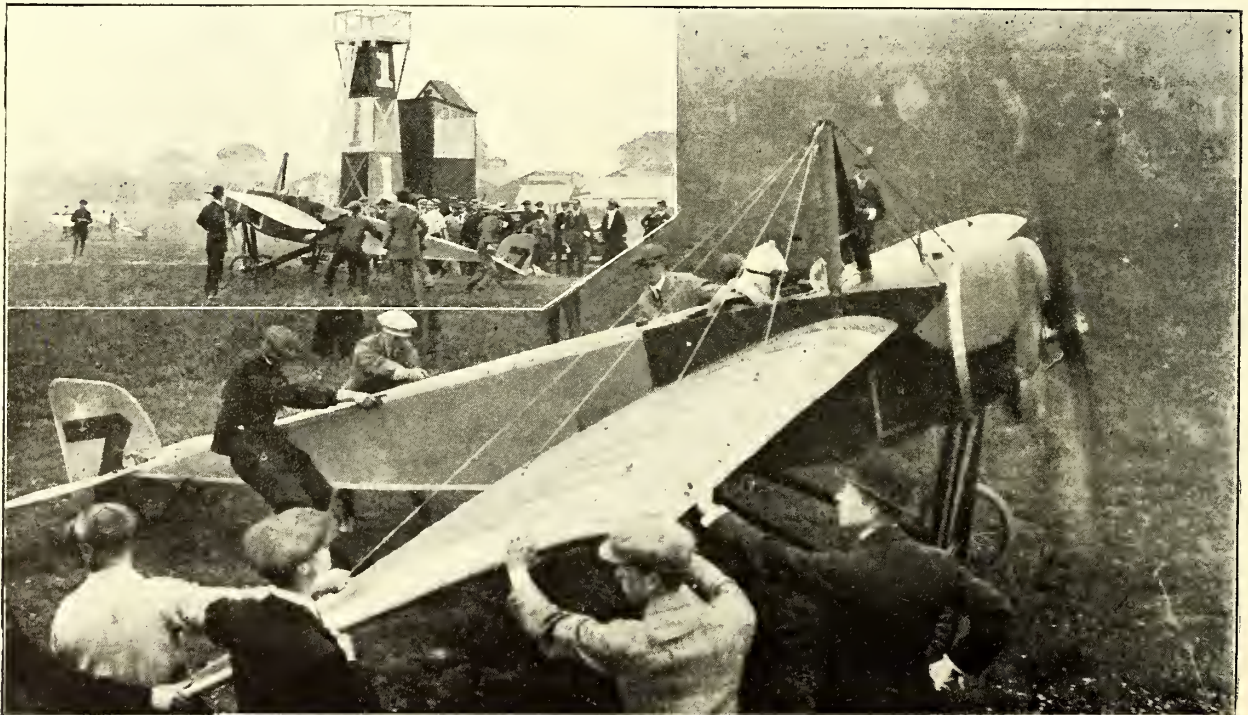
The Women's Patriotic Aerial League.

The following letter has been received from 25, Denison House, Victoria, S.W. :—

"Sir,—For some time past the Women's Patriotic Aerial League has been engaged in a most important scheme to raise a fund for the benefit of the widows or near dependents of Naval, Military and civil pilots killed while on duty. Such a splendid object would seem to need no further explanation or eulogy from us, but we may be permitted to express the opinion that the existence of such a fund would have an excellent effect on recruiting for the various ranks of the Flying Services. The Government pensions for widows and orphans are deplorably inadequate, and to subscribers to the Flying Accident Fund it should be a comforting thought that they are not only contributing to the ease of mind of the flying man in his many moments of difficulty and danger, but are providing for his unfortunate dependents should he lose his life or become permanently disabled in the glorious cause of National Defence. Subscriptions are now most urgently needed and may be sent to the offices of the League at 25, Denison House, Victoria, S.W.—(Signed) ALICE M. O'HAGAN (Chairman), RACHAEL DUDLEY.

Aero-Engine Supplies.

It is understood that arrangements have been made by which Gnome engines are to be manufactured in quantities by the Daimler Motor Company of Coventry.



ONE OF OUR ALLIES.—M. Noel getting away at the start of the London-Paris and Back Race.

The Netheravon Accident.

It is with deep regret that one records another double fatality among the personnel of the Royal Flying Corps (Military Wing) owing to an aeroplane accident. On Wednesday of last week, Mr. Robert Skene, 2nd Lieutenant, No. 3 Squadron, was starting from Netheravon with an air mechanic named Barlow, on a tandem Blériot, 80-h.p. Gnome, when in making a turn the machine side-slipped, nosedived and struck the ground before she could recover. Mr. Skene was killed in the machine and Barlow was thrown out, being killed by striking the ground.

Robert Reginald Skene was born in London on August 6th, 1891, and took his certificate on a Bristol biplane at Brooklands on July 21st, 1913. He was appointed to the Reserve of the Royal Flying Corps on November 15th, 1913, and was called up for service on mobilisation last week. After taking his certificate he went on for a monoplane course, and proved to be a particularly brilliant flier. Early this year he went to France, and at the Blériot school at Buc he looped the loop, purely to see whether the feat was really difficult, and not with any idea of making anything out of it. Recently he did a considerable amount of flying on the Martin-Handasyde monoplane, and then displayed his ability to good purpose.

Personally he was of a very modest disposition, though a thorough sportsman. I well remember him at the Brooklands dinner at Olympia, during the Aero Show, when vociferously called upon to describe his looping performances, rising unwillingly and remarking in the simplest manner possible that he did not see why, if one chose to go up in an aeroplane and turn it upside down, one should be compelled to get up and talk about it. It was not that he was unable to talk, for he could discuss the problems of flying as well as anyone. He will be greatly missed by very many friends,

and his loss is the more to be regretted in that he was of the class that makes a very good and useful type of officer.

The accident itself seems, on the evidence at the inquest, to have been a very simple one. The machine, an ordinary standard type 80-h.p. Blériot, was loaded up for a long cross-country flight, presumably from Netheravon to the coast, on the way to the Continent. This would mean an outfit of navigation instruments, full tanks, and probably a certain amount of kit, and a passenger was carried also. With full load the machine, especially if an old one, would be sluggish in climbing, at any rate, for the first hour or so till some of the fuel was consumed. It seems probable that Mr. Skene, who was used to flying lightly-loaded Blériots, or the Martinsyde with its 120-h.p. engine, tried to climb too quickly, and then tried to turn with the tail down. The result would inevitably be a side-slip and dive, exactly similar to that in which Mr. Fisher and his passenger were killed.

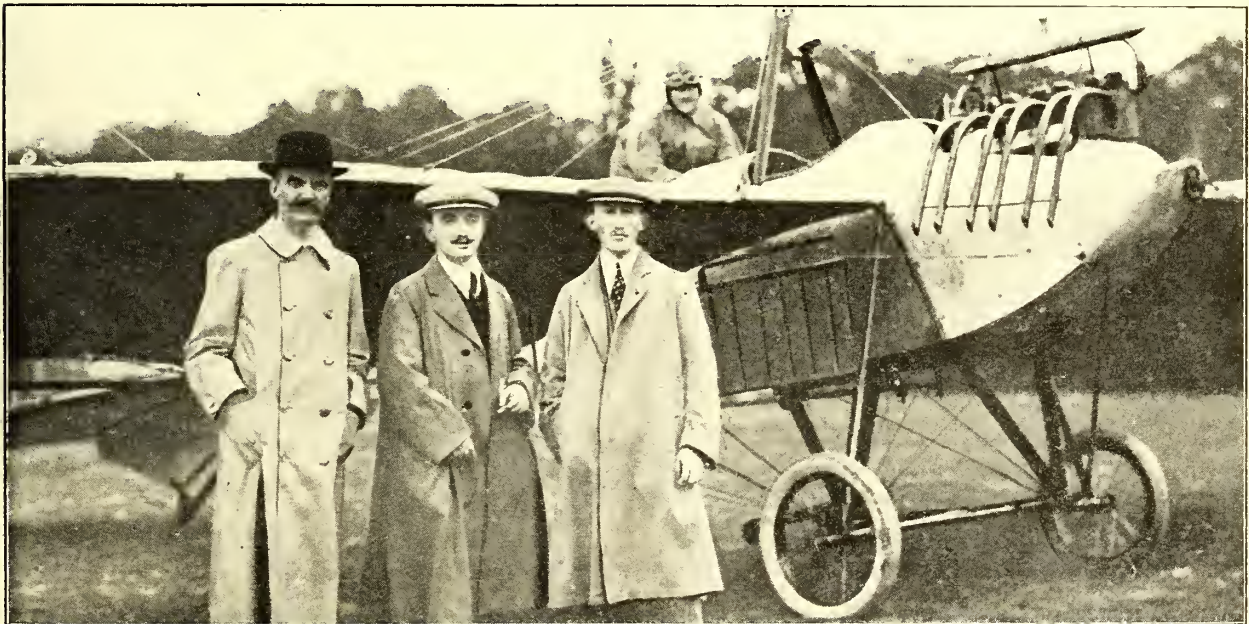
This type of Blériot, if there is room below, can always be brought back from practically any position, but under the circumstances of this accident something like 300 feet would be needed to recover, whereas the evidence says that the fatal turn commenced at about 200 feet.

It appears that the only safeguard against such accidents, which are liable to occur on any make of machine, is a still greater degree of inherent stability, so that the side-slip takes less time to develop into a dive, and perhaps a greater degree of controllability also. There is, besides, the point that a less heavily loaded machine will obey its controls quicker, and will acquire less momentum in a given time. Therefore it seems that on active service it may be wise to reduce a machine's radius of action somewhat by carrying less petrol, in order to decrease the danger of accident during the first part of its journey.—C. G. G.

The Right Spirit.

It is always good to see those whom one might reasonably expect to sever their connection with aviation continuing to take an active interest therein. For instance, after the loss of his son, Mr. George Lee Temple, one would have expected Mr. Temple, Senior, to give up all participation in flying. Nevertheless, Mr. Temple made a flight of about an

hour's duration some few days ago as passenger with Mr. J. L. Hall on the 50-h.p. Avro. He told the writer that he thoroughly enjoyed the flight. One cannot help admiring his sporting spirit, though it is only what one might expect from an ex-naval officer and Arctic explorer. Mr. Temple remarked that it was his late son's wish that if he died his father should not lose interest in aviation.



A BRITISH PILOT IN GERMANY.—Just before the war, Mr. Dukinfield-Jones, who has done so much good flying on D.F.W.s (now to be made by Beardmores of Glasgow), visited the D.F.W. works at Leipzig. He is here seen (on the right) accompanied by the Messrs. Kny, father and son. Mr. Kny senior is a Dane, and Mr. Cecil Kny is half English.

The Acceleration of Aircraft Production.

BY A. C. BURGOINE.

In the last issue of THE AEROPLANE, Mr. W. H. Sayers—to whom all good luck in his new rôle!—went broadly into the possibilities of greatly accelerating the output of aeroplanes in this country: the writer proposes to go into some detail matters in connection with the same subject, believing that few people outside the trade realise how very difficult it is *greatly* to increase the output from any aeroplane works.

Of course, the first thing to think of is the provision of an ample supply of money for the purposes of the business—payment of wages, purchase of special materials, and so forth. In the ordinary course of things, few aeroplane builders are overburdened with cash, and many find it a struggle to get along at all. The Government, then, when placing orders, must be prepared to assist constructors by making prompt payments on account as the work progresses, or by guaranteeing bank advances in some manner that might be devised. Makers of engines are not universally free from financial worry, and just now, with the motor trade terribly hit and most matters thoroughly upset all round, they may need similar assistance to enable them to push along with the engines that the authorities are, as we understand, freely ordering.

The enforced stoppage of much work on cars must have left large numbers of skilled mechanics and much plant more or less idle, so that there should be no difficulty whatever in getting engine parts "made out," while any motor-car works should be able to turn out large quantities of any of the numerous clips and sundries required in aeroplane construction.

But in the case of the aeroplanes themselves, as apart from engineering work, there will be much greater difficulty. Aircraft builders have long found great difficulty in obtaining labour in sufficient quantity and the required quality: practically every firm has to train its own men from the raw material in the shape of joiners, boatbuilders, fitters, and the like. It is by no means easy to obtain men in the ordinary course, and just now it will probably be even worse; the ordinary hands from other trades need a lot of knocking into shape before they are worth much in an aeroplane works, and their work will want a lot of watching to begin with, so that inspection will be more than ever necessary if faulty work is to be eliminated. The greatest difficulty with "wood butchers" is to persuade them to work to close limits of accuracy, so that work may go together without a lot of fitting and the concomitant loss of interchangeability. Boatbuilders or joiners either are much alike in that respect, and it must be continually drummed into them that accuracy to drawings or templates is absolutely essential from the very outset.

There are any number of machine joinery works in the country that could turn out struts, booms, etc., by the hundred; but the work would have to be done under most rigid inspection to ensure accuracy and the use of sound materials—for these works are not usually renowned for their care in selection of the stuff they use. Unless a firm of constructors be given a sufficiently large order it would hardly pay them to go into the question of getting a lot of wood-work made out, for the difficulties named would be likely to cause so much trouble to begin with that there would be little time saved in the end.

With regard to the building of seaplane floats, much the same difficulties are likely to arise, for the construction of these can only be undertaken by the most highly skilled class of "light carvel" boatbuilders—that is, if they are to be really good jobs, and such as one would like to see our Naval Air Service pilots trust themselves to. There are many hundreds of boatbuilders all round the coast and inland who would be able to build rough, plain, "clencher-built" floats, or even heavy "carvel-built" ones; but there are very few who can be trusted to do the light "carvel" work in demand. The men needed are those who have worked on the very lightest of racing sail and motor craft, and probably more than half

the total number of these have already been absorbed into aeroplane works in certain districts. Certainly there is a great dearth of such men on the Thames, which used to be their stronghold a few years ago. Floats must be built as lightly as possible, consistent with the necessary strength, and light work needs just that special class of hands that always have been so difficult to find.

There might be some possibility of greatly increasing the output of floats in any works, if as much of the material as might be were machine planed outside to gauges for thickness, and, in the case of timbers and framing, for scantling. That would leave it to the skilled hands to do the fitting and actual building only, whereas in the ordinary course of a boatbuilder's work he spends much time in merely preparing. But this course would be possible only if the design of the floats happens to lend itself to the exact taking off of scantlings from the drawings—which is not always the case with floats, especially those of the flying-boat type. In view of the ample lifting power of practically all machines to-day, there is little object to be served in spending a lot of time in lightening such parts as strut sockets and clips by punching or drilling innumerable holes in them; and much of the usual filing up and polishing is absolutely useless as regards weight saving or general efficiency.

Elimination of all the unnecessary polishing and similar work would save quite a large amount of money and time on some machines, and one might almost go to the extreme of suggesting that the engine builders be also instructed to drop a lot of their usual finishing work, where this might by any chance retard completion. But there must be no scamping to save time in any of the essentials of an engine or machine, and the general level of workmanship must be even higher than usual, for the fate of nations may literally and absolutely depend upon the smallest detail of an aeroplane in war service.

Lieut. Porte's Return.

As the Wanamaker-Curtiss attempt on the Trans-Atlantic flight has been definitely postponed, Lt. John Porte, R.N., has returned to England. He states that the "Amerika" flies beautifully with the biggest load she is able to take off the water and obviously has sufficient reserve lift to fly with full load for the journey. The only difficulty is in getting that load off the water into the air. A new type of hull is being built, and experiments with it will be carried out in due course, though, of course, no attempt will be made to cross the Atlantic till the war is over. It is understood that Lieut. Porte is to join the Royal Naval Air Service during the period of the war, and his wide experience first in the Navy and more recently in aviation should be of high value.

Essays on "First-Aid."

The Competition amongst school children for essays on "First-Aid," organised by C. E. Fulford, Ltd., the proprietors of Zam-Buk, concluded recently, when near 10,000 essays were sent in from every corner of the British Isles.

According to the Judges' report, the essays disclose a much improved knowledge of "First-Aid," due probably to the introduction of the study in the regular curriculum of Council Schools. The standard of merit is higher in the case of girls than boys, which seems natural. The essay which secured the highest number of marks was written by Miss Mildred Swinscoe, aged 13, of the Berry Brow Council School, Huddersfield.

This method of increasing the general knowledge of "First-Aid" is highly commendable and one would like to see it extended, for it is comforting to think that the aviator or motorist who meets with a mishap may fall into the hands of some youngster with enough sense to be really helpful in binding up a wound. The "Zam-Buk" people are to be congratulated on inventing so useful a way of advertising their excellent goods.

Will History Repeat Itself?

A reader of *THE AEROPLANE* who evidently believes in the long arm of coincidence sends the following brief comment on the war:—"1814-15, Napoleon. 1914-15, Wilhelm II. 2014-15, Russia, unless she learns the lesson of preceding centuries."

Practical Patriotism.

The Directors of the British Petroleum Company, Ltd., have notified their staff that full wages for the first three months will be paid by the company to all employees who have been, or are, called to the Colours either in the Navy, Army, or Territorial Forces, and that their positions will also be kept open. The matter will be again considered at the end of three months if necessary. No one will grumble at an increase in the price of petrol if the surplus is to be employed in this way.

More Practical Patriotism.

Upwards of 1,000 of the employees of the Dunlop Rubber Company, Ltd., have been called up for service. The company is providing for their families during their absence and their positions are being kept open for them when they return. It is hoped, therefore, that everyone will do their best to support the firm with orders so as to keep the remaining employees of the firm working full time, and so that the contributions for the families of the absentees may be continued.

What is Patriotism?

The following letter has been received:—

"I should like to bring before your notice the 'patriotism' (?) showed by a certain well-known aviation school at Brooklands. I went there with credentials that I had been learning on a Henri Farman box-kite and was perfectly ready to take my R.Ae.C. brevet. Also, I have volunteered for the war and my name has been sent to the War Office and Admiralty by the Aero Club.

"Under these circumstances, you would not expect to receive a telegram that the school could only take you at the usual fee, £75, especially as that school is flying box-kites. I should deem it a favour if you would mention something re this letter in your next issue.—(Signed) ROBERT BRUCE SIEVIER."

[Considering that practically every school in England has been run as a philanthropic institution for the past two years, one cannot see that Mr. Sievier (junior) has any great grievance. £75 is a fee which, on the whole, represents a dead loss. If no pupils ever smashed machines it would pay handsomely, but one clumsy pupil frequently obliterates a whole machine, and with it goes the profit from ten skilful pilots. Consequently, it hardly seems likely that any school can show a profit on a year's total expenses.

Most schools are run with the idea that Service pilots trained at any school will, knowing the soundness of the firm's products, be well disposed towards that firm's machines. The fault lies with the parsimony of the War Office in fixing on £75 as the sum to be paid to an officer when he takes his certificate, and the officer really gambles that sum on the chance of being accepted for flying service. If the War Office accepted the officer first and then guaranteed £150 or £200 to the school when he passed for his certificate on a really modern machine—instead of the old type—the Army would get pilots with greater experience, and the schools could afford to use more machines.

As it is, the schools lose money, and pilots are only trained to the point of getting their R.Ae.C. certificate, which is about as near real flying as driving a car round Brooklands is near averaging 25 miles an hour from the Marble Arch to the Bank. The fact that a pupil is "perfectly ready to take his R.Ae.C. brevet" is an excellent reason for refusing him altogether at another school, for he probably has to unlearn so much that he is more trouble than he is worth. "Patriotism" has nothing to do with the question. If I want a pair of marching boots, is that any reason why a bootmaker on the verge of starvation through cut prices and bad trade should cut his price still further for my benefit?

Meantime, the paper with which Mr. Sievier's name is generally connected shows its ignorance of aviation, and endeavours still further to damage the business of British aviation schools.—C. G. G.]

Pilots' Movements.

Presumably no one will dispute that Mr. B. C. Hucks is the leading British pilot of to-day. During many past months his exhibition flying has brought him in an income which a Cabinet Minister would not despise, and he might have retired comfortably into private life on the proceeds till the war was over. Because of this one honours him the more for joining the Royal Flying Corps as a 2nd Lieutenant, and one hopes to see him return with much honour. His skill on a Blériot would make him an ideal pilot to take up senior Staff Officers who were desired to read the enemy's movements direct instead of relying entirely on observers' reports.

Mr. Warren Merriam, as noted in these columns some weeks ago, has left the Bristol Company. It was his intention to make an exhibition tour on a Caudron, but that project has, of course, fallen through. His long experience, and success as an instructor on the box-kite type of biplane, should make his services of value to any school, naval, military, or civilian, where the preliminary teaching of flying is carried on.

Mr. Marcus Manton, formerly of the Grahame-White Co., and more recently Mr. Hucks' very successful understudy in numerous exhibitions, has again joined the Grahame-White Co. as chief instructor. He is a valuable acquisition to the school, which is now as busy as can be with the influx of new pupils. He is even a better flier now than when he was so well known at Hendon, and he has the knack of teaching.

Mr. F. W. Goodden, the crack pilot of Moranes and Caudrons, has been hard at work lately at the Royal Aircraft Factory putting B.E.s built by contractors through their flying tests for the A.I.D. Messrs. Spratt and Wingfield-Smith, and, one believes, Mr. Busk, have been called up for military duties of one kind or another.

Mr. Grahame-White is making a good recovery from his smash in Southampton Water when testing the G.-W. "Circuit" biplane. It appears that when the machine struck the water and turned over, Mr. Grahame-White was pitched clean out over the upper plane. When one hits the water flat at about 60 miles an hour one finds it is in its effect a good deal harder than one expects. As a result, although he felt no particular ill effect at the time, he has since been suffering rather severely from general concussion, which has caused considerable pain in his head. He is now almost well again, and one gathers that his experience of aviation will be utilised in one way or another by the Royal Naval Air Service.

Mr. Grahame-White's passenger, Mr. J. D. North, the chief designer of the G.-W. Co., went clean under with the machine, and had a very unpleasant minute or so till he could claw his way out between the planes and reach the air.

Mr. Gaskell Blackburn, who has lately been doing some very good flying on the Flanders biplane, now fitted with a 70-h.p Gnome, has joined the Royal Naval Air Service, and his machine has been taken over by the Navy.

The Week's Work.

Weather Reports for Week Ending August 15th.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon	Windy	Fair	Fair	Fair	Windy	Windy	Windy
Brooklands	Good	Good	Fair	Fair	Fair	Good	Windy
Southampton...	Fine	Fine	Fine	Fine	Fine	Rain	Fine

Flying at Shoreham.

On Monday of last week Mr. Raynham started from Shoreham for Calshot flying the Avro waterplane, 80-h.p. Gnome, belonging to the "Daily Mail." He taxied the machine down the river, turned round, got her off head to wind, and was making a left-hand turn to get out to sea again when the engine started missing, with the result that the machine came down opposite the railway bank and was badly smashed; fortunately, Mr. Raynham was not hurt.

The various schools at Shoreham seem to be very busy with tuition work and many applications have been received from pupils who wish to take their certificates quickly in

order to join the Royal Flying Corps. The Pashley school which Mr. Hale has joined as a partner is particularly busy.

Flying at Southampton.

On Monday the Sopwith "Circuit" bat-boat flew during the morning from Woolston, and after flying over Southampton Water, alighted at Calshot. Late in the afternoon Mr. B. C. Hucks, on a Blériot monoplane, flew to Southampton, and after encircling the town returned to Calshot.

On Tuesday, early in the morning, Mr. Hucks was again out on the Blériot, flying over the Hamble district at a great speed. Mr. Gordon England had the Hamble River, Luke and Co. seaplane out in the afternoon. Trials came to an abrupt conclusion, owing to the bursting of the radiator pipe.

On Wednesday, the new "Wight" seaplane flew from Cowes during the morning, and later on three water machines were flying over the troopships as they left Southampton.

On Friday, the new "Wight" seaplane flew and alighted near Ryde.

Early on Sunday morning, Mr. England again had the Hamble River seaplane out on Southampton Water, but the engine prevented the machine from lifting. Aeroplane engines have been heard flying at night on numerous occasions.

School Reports.

Brooklands. — AT BRISTOL SCHOOL: Instructor: Mr. Stutt. Pupils with instr: Mr. Arbuthnot (15), Lt Nickerson (12), Mr. Gamwell (5), Lt Levy (14), Mr. Weir (1), Lt Douglas (1), Mr. Rosher (10). Str or rolls alone: Lt Bagley (12), Mr. Thomson (9), Mr. Weir (3), Lt Douglas (6), Mr. Gamwell (9), Mr. Collins

(5), Lt Levy (1), Mr. Arbuthnot (1). Certificates taken by Mr. Weir, Lt Douglas, Mr. Gamwell, Mr. Collins. Machines in use: Four "Bristol" biplanes.

Hendon.—AT GRAHAME-WHITE SCHOOL: Instructors: Messrs. Russell, Lowe, Winter and Weber. Pupils with instructor: Messrs. Toolis, Courtney, Stalker, Crowe, Greenwood, Carabajal, Easter, Wyles, Lister and Capt. Upton. Straights alone: Messrs. Courtney, Wyles, and Capt. Upton. 8's or circs: Mr. Palmer and Mr. Courtney. Machines: Grahame-White biplanes.

AT BRITISH CAUDRON SCHOOL.—Instructor: Mr. R. M. Murray. Pupils doing straights alone: Messrs. Murray and Abbott, Mr. D. Keith Johnston (new pupil) rolling. Circs alone: Mr. Murray. Machines: Two Caudron biplanes, 35 h.p. Mr. Prosser, a former pupil, has been making excellent flights on a 45-h.p. Caudron biplane. Mr. Murray on Saturday stalled on a turn and alighted on propeller from 30 ft. Machine deformed but Mr. Murray very slightly damaged. Excellent example of safety of Caudron type.

Shoreham.—AT PASHLEY BROS. AND HALE: Instructors: Messrs. E. and C. Pashley and B. F. Hale. Pupils with instructor: Messrs. C. Winchester, J. Borton, H. Pashley, J. Woodhouse. Straights alone: Messrs. E. Roberts, V. Purnell. 8's or circs alone: Messrs. E. Roberts, C. Rutlen, V. Purnell. Certificate taken by Mr. W. Mortimer (Aug. 10th). Machine: Pashley biplane. Mr. Mortimer made two flights in good style, these being some of his bonus flights for passing without breakage.

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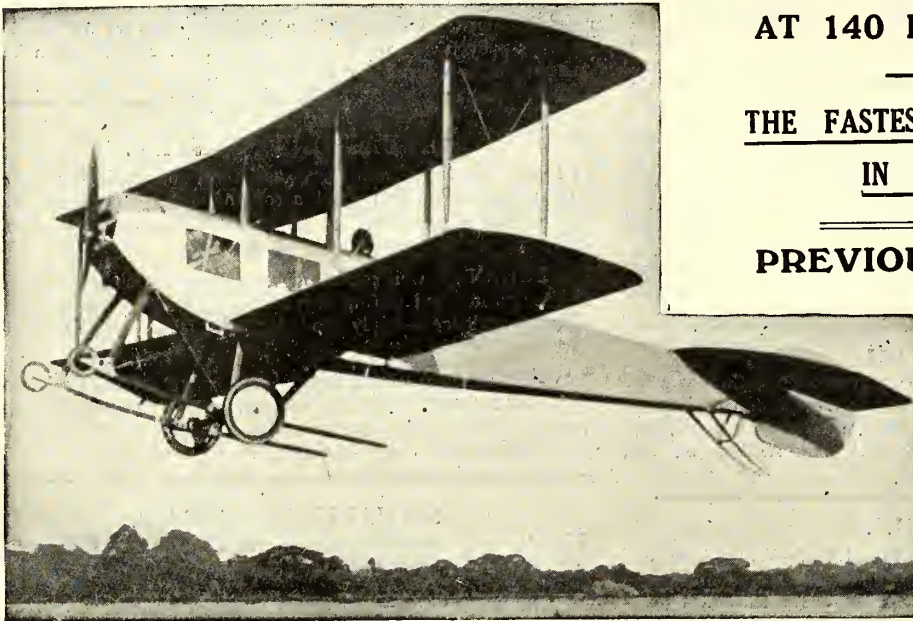
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"THE AEROPLANE," AUGUST 26, 1914.

THE AEROPLANE



Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.]
AS A NEWSPAPER.

WEDNESDAY, AUGUST 26, 1914

No. 9

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Aircraft in the War.

In the past,—it seems a very long time ago,—when we used to hold debates on aeronautics in general, and when, sitting peacefully in the United Services Institute, the grim realities of war seemed a very long way away, notable soldiers, some of them intimately concerned with military aviation, and some merely interested observers of the new arm, agreed with singular unanimity that in a modern war the first thing that happened would be a battle in the sky between the air-fleets of the opposing armies, that not until one fleet had wiped the other out would the main armies come to close quarters, and that then, other things being equal, the victory would be to the one which had some air scouts left.

Subject to certain minor reservations, one agreed with these opinions, yet now that we are actually in the thick of the great European war—a war which those poor fools who believe in human progress have told us was impossible—we find the main armies fairly busy murdering one another and yet the accounts we have heard of fights between aircraft have been few and unreliable. The absence of such stories may, of course, be accounted for by the fact that the newspaper correspondents have not been educated in military aviation and therefore did not expect fights between aircraft, otherwise, of course, they would have obliged with circumstantial accounts of purely imaginary events, as is their custom. The bringing down of airships and aeroplanes by rifle and shell fire, the destruction of slow airships by fast aeroplanes, and the dropping of bombs by both species of aircraft, are, of course, incidents which could be produced by the imagination of any journalist, so we have had them.

Some journalists, special correspondents in Paris or Brussels (when Brussels was miles behind the Belgian fighting line, instead of in front of it), even managed to discover and embroider stories of "astounding airmanship,"—as our friends of the "Daily Mail" might call it—such as those of aviators descending in woods, to hide, and getting out at night after the Germans had disappeared, aviators calmly filling tanks within sight of the enemy and getting off from under their astonished noses, and aviators blowing up airship sheds and seeing what was inside them afterwards. And yet we have heard next to nothing of actual fights between aircraft, no "World's aerial navies grappling in the central blue," as Tennyson put it. There was a brief mention of the fact that the crack Belgian flier, Olieslagers, tried to tackle a German machine and failed; there was a story of a French pilot chasing a German with a Browning pistol but no damage was recorded, and there was a yarn of a slow French machine escaping from two faster German machines each of which carried three men armed with "repeating rifles," a story which appears a trifle thin because there seems no particular object in loading a machine up with three passengers, and because the Germans are not known to possess any four-seaters,—that is, to accommodate a pilot and three riflemen. Certainly the scarcity of aerial fighting cannot be put down to scarcity of aeroplanes, for apparently the air is thick with them.

There is one peculiar thing to be noted in connection with this, namely, that the newspaper correspondents in Belgium continually write of German "Taubes," whereas the French correspondents write of German "aeroplanes." Now the "Taube," or Pigeon type (Taube being really the same word

as Dove), is the Etrich or Zannonia type monoplane, with swept-back, upturned wing-tips. It is quite distinctive, even to a journalist, and the name is not applied to biplanes. This suggests that the Germans are using their old out-of-date Taubes in Belgium, and are keeping their hundreds of faster modern biplanes, of the L.V.G., Albatros, Rumpler, and Aviatik types, which are really more like Sopwiths with fixed-cylinder engines than anything else, for the French and for our special benefit. It is a point which might be turned to military advantage.

Why there is Little Fighting.

In reality, the small amount of fighting in the air may be put down to two main causes. First, because aeroplanes avoid one another purposely, and second, because there is no such thing as a proper fighting aeroplane.

There are two good reasons for aeroplanes avoiding one another. The first and most important is that the duty of a scout is scouting. He is there to get information about the enemy's forces. If he is met by an enemy aircraft before he gets his information he is very unwise to become involved in an avoidable fight, and when once he has got his information it is his first duty of all to get back with that information at all costs. The second reason is that while it takes a brave man to fly over hostile country at all, a man of altogether exceptional bravery is needed to go deliberately into a fight with another aircraft unless he has some obvious advantage over the machine he is attacking. A soldier may take his chance of being shot on the ground, or an aviator may risk having his machine damaged by fire from the ground by coming too low for a short while in search of important information, but getting mixed up in a battle in mid-air when it can be avoided is quite another matter.

Some of the pluckiest fliers I know have told me that fighting in the air is rather more than they care about, and many of them agree with a remark made in this paper a year or so ago, that an air scout on a good machine is safer than is a cavalry scout who may be shot from behind a hedge at every turn of the road, or in every field he crosses. There are degrees of pluck, or of recklessness, even among the bravest men, and it is by no means certain that the man who deliberately looks for a fight in an aeroplane is in the end as useful as the man who avoids it.

As to the lack of real fighting machines, this is simply due to the fact that the war has come before even the most sanguine, or sanguinary, soldier expected it. A number of people have been experimenting with armed aeroplanes, but none of them have developed a machine which could be useful against fast scouts. "Gun-busses," as they are cacophonously called, with a machine-gun in the bows, can be useful perhaps against airships, but in all those I have ever seen the gun has such a strictly limited traverse that it would be comparatively easy for any decent pilot, even on a slower machine, to keep outside the base of the cone representing the space covered by its fire, and against a machine which can fly and climb faster such a gun-carrier is as helpless as if it had no gun at all, for it cannot fire backwards at a pursuer, and may be brought down by buck-shot, revolver bullet, or hand-grenade, by the simple process of flying above and behind it. A comparatively slow gun-carrier is useless unless its gun can fire horizontally all round the compass, and a fast gun-carrier must be at least fifteen miles an hour

faster than its opponent if it is to do any trade. Now, even the old type Taube monoplanes do between 60 and 65 miles an hour, and the new German biplanes go nearer 75 than 70, so it is evident that even in this war an aircraft destroyer must not be slower than 75 miles an hour, and to be really useful its speed should be nearer 90 miles an hour, for, remember, the only types of gun-carrier we know are designed purely for offence, and to be offensive one must "first catch one's hare."

A Possible New Type.

Quite another proposition is a type of machine which, so far as I know, has not been discussed by anybody, that is an armed and armoured scout. This might be a comparatively slow machine, having its vital parts armoured against rifle or shrapnel bullets from below, so that it could fly rather lower than is thought wise for ordinary machines, and armed with perhaps two machine-guns in a stream-lined turret projecting slightly above the upper plane, so that the guns could sweep a complete circle, and fire upwards as well. Fire directly downwards would not be possible, but the guns could be aimed slightly below the horizontal. Such a machine would simply be intended to force its way through the enemy's air fleet to obtain information, defending itself against attack by faster machines. This is not, of course, the time to experiment with such a type, which would be very expensive and need enormous power, but it may be worth noting for reference when the war is over.

A Machine We Might Make.

There is, however, one novel type of machine which might be tried, because it involves little departure from existing types. That is a biplane of high power, and therefore high speed, in which the planes are heavily staggered the wrong way. The lower plane would be far forward, and the pilot would be seated in front, so that he would have a clear view of the sky overhead and would be able to see and avoid anything approaching from above or the front. He would also be able to see forward, and below him, at least as well as the pilot on any monoplane can, and not much, if any, worse than he can on existing biplanes in which the lower plane is behind the upper one. The passenger would be seated as far back as the proper balance of the machine permitted. He would see nothing above him, but his view below would be almost perfect, except for a small area forwards. Such a machine, otherwise on the lines of existing Avros and Sopwiths, and fitted with either a 100-h.p. Gnome or Anzani, a 110-h.p. Green, a 130 Salmson, or a 150-h.p. Sunbeam, would be comparatively small, compact for transport, and fast enough to catch almost anything the Germans possess.

Its method of operation would be to catch the hostile machine and destroy it by flying over it at short range, the absolutely clear view under the passenger giving him free play either with grenades or with a scatter-gun.

Incidentally, I may say that an artillery officer of high rank who recently held an important command unconnected with aviation, though he has studied the subject deeply, told me not long ago that he quite agrees that a heavy charge of large soft shot at close range is likely to be much more deadly against air-craft than is a stream of small hard bullets from a machine-gun. Also, as several of our duck-shooting Naval aviators can bear witness, it is quite possible to aim from the shoulder in an aeroplane, and, years ago, the late Hubert Latham said that in shooting from an aeroplane it was easier to aim backwards than forwards. I venture to submit that such a machine would be more useful than any existing type as a destroyer.

Even purely as a scout it would have something of an advantage, in that the passenger's clear view backwards and downwards would enable him to see troops who on the approach of the aeroplane had hidden behind hedges or buildings, and his useful forward view would be very little worse than at present. Also, personally, I prefer to have the pilot in front, for then, if he makes a mistake in landing or starting, and turns the machine over, he collects the result himself. There have been dozen of cases in which the man in front has been killed or seriously injured and the one behind

has escaped, so as the pilot is responsible the pilot ought to be in front.

A machine such as I have indicated could be built in a few weeks entirely from existing material, so it may be worth someone's while to try it, busy as all the works are. Otherwise it is fairly certain it will be produced by the official designers, who will take all the credit.

Right Men in Wrong Places.

Apropos the production of aircraft, especially of new and improved design, may I respectfully suggest to those in authority that in the hurry of mobilising a good many cases must have occurred where the right men are in the wrong places? As an example, we have lost young Mr. Copland Perry, who, on account of his brains and money, would have been much more useful turning out aeroplanes, or parts thereof, than he could have been when acting as a pilot. There are other cases, who must of course be nameless, of men whose brains and engineering ability, and knowledge of what is and what is not a safe aeroplane, would be of the highest value at home, being sent out to fly, not as scouts—for they have not had sufficient military experience—but simply as pilots for military observers. And there are several really first-class pilots, some of them N.C.O.'s, who are not flying at all, or who are being kept at home against their will as instructors, who would be only too pleased to take their places. This strikes one as waste of good material. It is like putting a tip-top chaser into a gun team instead of handing him over to a general officer's galloper.

Commissions have been given to some people on the strength of their having passed for their aviators' certificates years ago, and they have been put onto jobs in which they will sooner or later prove their worthlessness, and men who have not taken certificates, or have definitely given up flying, but who would be extremely useful in connection with R.F.C. work, are walking about with nothing to do, or are acting as volunteer chauffeurs for Territorial brigadiers.

Of course, these things will sort themselves out in time; war always finds out the weaklings and wasters, but time is valuable, and one hopes that the sorting out process will not be long in starting. It would be ungrateful to grumble when so much good work has been done by those who are running the R.F.C., and these remarks are intended merely as indicating where the investigations may well begin.

Permissible Criticism.

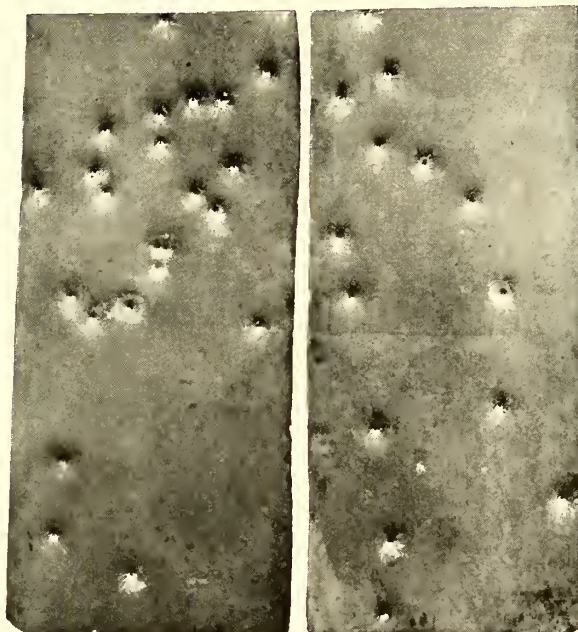
National unanimity is eminently necessary if we are to win this war and squash Germany flat in the shortest possible time, but unanimity does not mean that all criticism is to be barred and that waste or misapplication of material is to be passed over without notice. One may quite possibly find the Naval or Military counterpart of those well-meaning but foolish women who are spending endless time and trouble and money in making badly cut and very uncomfortable shirts for our soldiers, and thereby depriving the female dependants of the same soldiers of the chance of earning an honest living by making such garments for sale.

If some of the people who are not compelled to earn a living would give up doing the work that other people have to do for wages, and would devote their time and money to finding out the best way of distributing various products among those who need them, they might justify their existence. For instance, look at the amount of food that is going to waste all over the country in gardens and orchards, while the poor people in the slums of all our cities are living on American stuff in tins. If some of the idle organisers would use their brains and their cars in seeing how this waste material could be bought at a fair price from the producers and sold at a fair price to the consumers by cutting out the piratical middlemen who rob both, they would do more good than by starting "needlework guilds" and persuading hard-worked but comfortably fed housewives of the lower middle class to take the bread out of the mouths of starving sempstresses.

Let the rich and idle woman go to her local dressmaker and order a few dozen shirts for the troops instead of a new frock for herself. That will help to keep the dressmaker's hands employed, and the time she herself would have spent

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The Educative Influence.

An excellent suggestion was made in one of the papers the other day that the end of the war might be hastened if the German troops were supplied with suitable literature distributed to them by aeroplanes. The notion is not half so foolish as it sounds. Apparently the German troops know nothing of what is going on—nor do our troops for that matter, till occasional batches of papers arrive—but the Germans are also fed with stories that the French take no prisoners, that Britain is taking no part in the war, that Russia cannot move, and so forth. The British Press has voluntarily muzzled itself to an unnecessary extent, but the German Press is officially muzzled still more tightly. A weekly bulletin of events, distributed to the Germans, might be quite useful. A photograph of a group of German officers guarded by French soldiers on the steps of Mülhausen Town Hall; another showing part of a German warship and its officers, with the name clearly displayed, with British blue-jackets in charge and the British ensign overhead; another of a few wrecked German aircraft under guard of British soldiers; another of German prisoners in an obviously French town; these and similar pictures with a few explanatory notes showing the progress of events, and reproductions of captured German official documents, would not exactly encourage the German troops. The whole scheme could be worked on a couple of hundred pounds a week, or even less, and it would be remarkably cheap at the price. I gather that the French propose to run a newspaper for the benefit of their troops; we might do the same, and if bits of both were translated into German, the free circulation on the wrong side of the fighting line might pay well for itself. The humour of the idea would appeal to our aviators.

The Ignorant British Public.

Talking of the ignorance of the troops, it is nothing compared with the ignorance of the British public on Service matters. I hope we shall be better educated when this war is over. Only recently the owner of an aeroplane came to this office to inquire how he could sell his machine to the Navy, and he asked quite seriously which department at the War Office looked after the Navy's affairs.

On uniforms the people are worse still. One officer of the Royal Naval Air Service tells the story against himself that he had to call at a certain office the other day where there is one of those beastly lifts where one presses the button

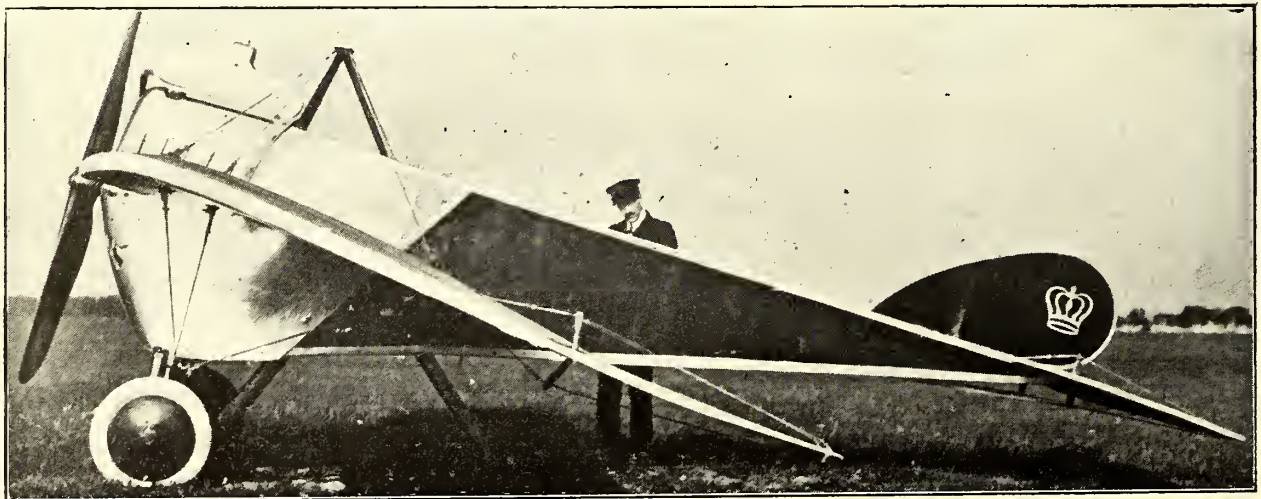
and the lift, if it feels good, does the rest. He stepped into the lift, and then looked back to see if anyone else wanted to go up. Along the hall came a hobbledehoy with a parcel, which he chucked on the floor of the lift and proceeded to light what I believe is colloquially called a "fag." The N.O. waited for him to shut the door of the lift, but to his amusement the boy turned round and said, "Nah then! Are yew agoing to tike me up in this lift, or 'ave I gotter work it meself?" Of course, all these noblemen in the uniforms of colonels of Kravonian hussars, or Wallachian hospodars, at the doors of picture palaces do confuse the public mind, but it is quite time the public was trodden on somewhat severely by the Services for its ignorance,—like the person in a gentleman's clothes whom I saw the other day sitting on his hat in Piccadilly as the result of trying to cross the road between two companies of infantry.

The Present Situation.

Having to write three days or so before this paper appears complicates matters somewhat, but in case the Official Press Bureau does not open its heart to the Public, I may perhaps be pardoned for pointing out that the present situation is not so terrible as some nervous old ladies seem to think. Part of a German army at Ostend, if it is really there, is nothing like as bad as Napoleon's vast army at Boulogne, and our grandfathers survived even that.

Let me put the whole thing in illustrative form. Suppose there are fifty men on one side of a wall anxious to fight with fifty men on the other side of a wall, and the only opening in that wall is only wide enough for two men abreast. It seems to me that much time and money may be wasted by doing all the fighting two at a time in the gap. If, on the other hand, the men who are being attacked stand back and let a couple of dozen of the enemy through the gap, and then all fifty fall on them, they stand a good chance of wiping them out a few at a time, till the attackers have had enough. Multiply the numbers by ten thousand or so, regard the line of country from the Dutch frontier near Liège down to the French frontier near Givet as the gap in the wall, and you have possibly some approximation to the general scheme as it stands at present, so long as the French troops from Basel to Givet can prevent the Germans from getting over the wall to the south of the gap.

Judging by the good work credited officially to the French military aviators it should be quite possible to prevent any surprise in that direction, and of course a French soldier with his foot in Alsace is worth two on the French side of the border. One hopes that before long we may hear equally cheering accounts of our own aviators' work. A half-censored telegram last Saturday looked distinctly encouraging.—C. G. G.



THE "BULL-DOGG."—Prince Siegesmund of Prussia's monoplane. (Another of Mr. Whittaker's smuggled photographs.)

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Aeroplanes on Service: A Study on the Spot.

BY SAMUEL S. PIERCE.

[Mr. Pierce's name will be known to readers of THE AEROPLANE as an experienced pilot of Blériots. He joined the Blériot firm in January, 1911, handled the Servians' aircraft in the Balkan War, flew in Egypt with Mr. Oswald Watt, and managed the Scotland to Norway flight for Lieut. Gran. He has also flown in Austria and Belgium.—ED.]

To deal with the actual military uses of aeroplanes in war is not in my province, but in every way the packing, care, shipment, training of personnel, etc., and supplying aeroplane units at the spots desired, and keeping them there in readiness for the staff's orders is a problem which I have already undertaken in actual warfare, namely, during the Balkan War, when I was sent to Servia in charge of eight machines.

We started in November, 1912, with the intention of getting through Montenegro, but as that was impossible, owing to the mountainous roads, we actually arrived at Nish by rail from Salonica, after the capture of that city by the Greeks and the railway bridge over the Vardar had been repaired. We had with us two 70-h.p. Blériot tandems, two 80-h.p. Deperdussin tandems, three 80-h.p. Henri Farmans, and one 50-h.p. Blériot single-seater. From Uskub we received one 50-h.p. Russian box-kite; from Belgrade one 70-h.p. box-kite, and also two 70-h.p. R.E.P.s, which had been shipped to Turkey via the Orient Express route, but had been held in the Custom House in Belgrade till war was declared—when they were promptly collared for our use. All the engines were Gnomes.

The eight machines which we brought with us from France were equipped with a complete set of spare parts, the Blériots having, further, "remorques" (trailers for transport), "cadres de route" (a wooden framework which fits over the fuselage and carries the detached wings in grooves alongside), and fitted tarpaulins.

The Turkish R.E.P.s were also equipped similarly to the Blériots, and their remorques came in very handy later on. There was one spare 70-h.p. motor with two noses—Farman type and Blériot type.

Nearly two months were put in at Nish, licking the corps into shape. The officers had not much more than gotten their elementary pilots' licences in France. The soldiers (fortress artillerymen and arsenal mechanics) saw aeroplanes there and then for the first time. There was plenty of work to do, rendered very unpleasant by the snow and bitter cold.

The first task was drilling the men in putting up and taking down the tent hangars (Bessonneaus), also packing and unpacking them. Next in assembling (but not adjusting) the machines, wheeling them about, filling tanks, starting engines, holding on to the tails, washing out the motors with paraffin, etc.

In about three days the machines were all assembled, and tried out, and then the officers started their practice, the ordinary course in flying, too well known to need mention here, and in reconnaissance work. Also one or two cavalry officers

were generally on hand for passenger seats to practice observing, use of field glasses, camera, and map-sketching, etc.

The extreme cold, generally about 20° Fahrenheit, led to three perpetual nuisances, namely, first, the tyres were continually rolling off in spite of tape and string, due to the bead wires contracting on the rims so that they snapped at the slightest provocation; second, the main stays and control cables contracted in a way that required very frequent adjustment; and third, the castor oil had to be melted in metal buckets over a fire before it could be poured into the tanks. When once in the tanks, even though it became of the consistency of Swiss cheese, the pumps seemed to handle it all right, and I do not remember one case of pump trouble.

Inside the tent-hangars, carefully dried boards had to be placed under the wheels to prevent the tyres freezing to the ground.

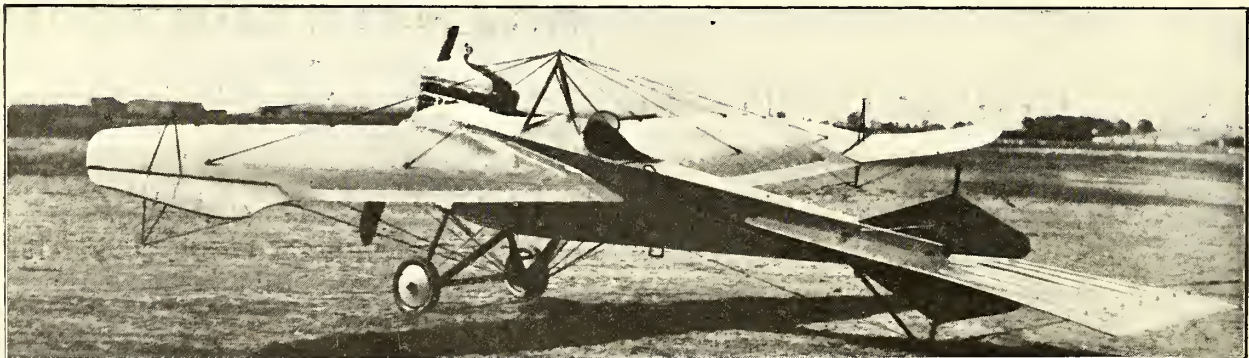
During the first three weeks the snow was about 2 feet deep here, and the "pusher" biplanes, Deperdussins and R.E.P.s had great difficulty in starting because of their large tyres, small diameter wheels, and thin skids. The Blériots, on the other hand, with their large wheels and very small tyres, could land and start about normally, except that in starting about three times the usual run was necessary with the tail as low as possible. None of the monoplane propellers suffered, but those on the "pushers" were somewhat damaged owing to the shower of snow thrown up from the skids.

The Farmans had extraordinarily bad luck. One of them was smashed to small bits by a pupil who came down right into the ground with the engine running full, at what would ordinarily be the gliding angle of the machine. The pilot got off without damage. The second one was squashed by its tent blowing down on top of it in a gale. Only the third survived for the active service trip.

Towards the end of the first war we were ordered from the base camp at Nish in Servia to the siege of Scutari. Flying being out of the question because of the distance and the mountainous nature of the country, this trip afforded every variety in methods of transportation.

It was practically impossible to ship the "pusher" biplanes without their cases, and here the Blériots were at a great advantage, making a neat unit with wings, etc., folded onto the "cadres-de-route," the whole being covered with specially fitted buckled tarpaulins. In this way there was no difficulty in shoving them on to the remorques, which two oxen could easily pull through the snow from the field to the railway line. Here they were run up on planks in the usual way onto railway trucks, the remorques and tent hangars on others.

With the "pushers" in their big cases it was a different story. Each case had to be hoisted up by brute human force onto two carts, four oxen were required to pull them, and many soldiers with poles to march on either side to prevent their tipping over on the rough ground and snow-drifts, or being blown over by sheer force of the wind.



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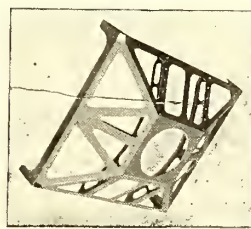
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Arrived at the railway line, there was great difficulty in getting trucks long enough and without "sides" to take the cases, and then building up an inclined plankway so as to get the carts level with the trucks as, of course, there was no hoisting machinery of any kind.

Once properly loaded, there was no more difficulty till arrival at Salonica. Here, fortunately, the railway ran along the quay, but the ship's winches were the only hoisting machinery afforded. Again the monoplanes were easily handled, while part of the ship's permanent bulwarks had to

be cut away to get the bigger cases conveniently on board.

We put to sea from Salonica with five other Greek transports, one loaded with ammunition, another with food, and the rest with troops. The aeroplanes, of course, had to be lashed on deck, the rest of the deck-space being filled in with supply wagons, full of hay; as the holds were full of troops and horses, our petrol (in drums from Russia) and castor oil had to be stored in the fore-peak, which was very lucky as it turned out.

(To be continued.)

Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," August 18th:—

WAR OFFICE, AUGUST 18.—REGULAR FORCES.—ROYAL FLYING CORPS (MILITARY WING).—The following temporary appointments are made. Dated August 7th, 1914:—

Brevet Major Hugh M. Trenchard, C.B., D.S.O., the Royal Scots Fusiliers, Assistant Commandant, Central Flying School, to be Officer Commanding, and to be granted the temporary rank of Lieutenant-Colonel whilst so employed.

Captain Robert Pigot, the Rifle Brigade (the Prince Consort's Own), a Flying Officer, to be Adjutant.

Second Lieutenant Loftus A. Bryan, South Irish Horse, from the Reserve, to be a Flying Officer, and to be seconded. Dated August 4th, 1914.

Lieutenant George B. Stopford, Royal Artillery, to be appointed to the Reserve. Dated July 8th, 1914.

SPECIAL RESERVE OF OFFICERS.—ROYAL FLYING CORPS (MILITARY WING):—

The undermentioned to be second lieutenants (on probation). Dated August 15th, 1914: Geoffrey Charles Gold, late Harrow School Contingent Officers' Training Corps; Hugh Christopher Tower, Arthur Vere Bettington, William Henry Charlesworth, Archibald Burch Ford, and Edwin Lewes Montague Leveson Gower.

TERRITORIAL FORCE.—YEOMANRY.—CHESHIRE (EARL OF CHESTER'S):—

Captain the Honourable Maurice Egerton is seconded under the conditions of paragraph 114 of the Territorial Force Regulations. Dated June 5th, 1914.

ROYAL ENGINEERS.—TYNE ELECTRICAL ENGINEERS:—

Lieutenant Ivor F. Fairbairn-Crawford to be seconded under the conditions of paragraph 112 of the Territorial Force Regulations. Dated August 19th, 1914.

From the "London Gazette," August 21st, 1914:—

ROYAL FLYING CORPS.—MILITARY WING:—

The undermentioned to be Second Lieutenants (on probation). Dated August 12th, 1914: Bentfield Charles Hucks, the Hon. Edward Alexander Stonor, Harry Sheehy Keating, Horatio Claude Barber, Cecil Harlowe Saunders, Arthur Meredyth Wynne, Thomas Frederick Duncan Robertson Aikman, and Edward Fraser Norris.

From the "London Gazette," August 24th:—

ROYAL FLYING CORPS.—MILITARY WING:—The undermentioned officers to be Flying Officers. Dated August 5th, 1914: Second Lieutenant Vincent Waterfall, 3rd Battalion the East Yorkshire Regiment, and to be seconded; and Second Lieutenant Oswyn G. Lywood, the Norfolk Regiment, Special Reserve of Officers, Supplementary List.

NAVAL.

Mr. Alfred Stead, the able correspondent of the "Daily Express" in Belgium, sent on August 22nd the following illuminating note from Ostend: "This morning, at five o'clock, a torpedo-boat destroyer patrol put in, delighting the hearts of the spectators on the front. The hydroplane station was dismantled, greatly to the sorrow of those stationed there, who were at the same time dying for a fight, and disappointed that the white ensign should be taken down from where it had been hoisted on the mainland of Europe for the first time for many years."

This discloses the fact, which has been known to some of us for the past week or so, that the passage of our transports has been covered by the Royal Naval Air Service. The inhabitants of North Kent have seen every day two of our air-

ships passing out in a north-easterly direction, but hitherto it has not been officially considered advisable to disclose the fact to the British public at large, though doubtless the Germans knew all about it.

These airships and the seaplanes from the Belgian coast have been on the look-out for the smaller German warships, such as destroyers and submarines, which might have made a raid from the North and thus have escaped our sea patrols when German battleships would not. When later on it is permissible to disclose more information about our fleet in the North Sea, it will doubtless be found that much important work has been done in other directions by the Naval Air Service.

In addition to the above, the Belgian correspondent of the "Daily Chronicle," writing from Chatham, on August 23rd, says:—"We were landed at Strood Pier at 1 p.m. to-day from the vessel X, which had waited till 2 a.m. off Ostend Pier to take off fleeing Britons, as well as aircraft, thousands of gallons of petrol, and other stores, and when the ship X, which, of course I must not more precisely identify, at last sailed for Sheerness her decks were simply covered with stacks of crimson tins of petrol. [Evidently special "Shell" aviation spirit for our seaplanes.—ED.]

"Apart from the £1,200,000 in gold [sent from the banks at Ostend to England], the Germans lost a haul of over £20,000 worth of British naval property and £2,000 worth of Red Cross packages from England, which arrived on Friday afternoon and were at once transferred to the X and brought back again, to prevent the Germans getting them.

"One of my fellow-passengers, who described himself as a French airman, and said he had fallen inside the German lines on Wednesday in his aeroplane and crawled into a wood, whence he escaped to Ghent, where I saw him on Thursday last, was detained for full investigation of his remarkable tale. He had come to England with the purpose, he said, of getting back to France that way."

[At the time of writing it appears as if the Germans do not intend to capture Ostend.—ED.]

* * *

There has been much flying at Eastchurch during the past week. Newly joined officers have been able to get in a large amount of practice on Henri Farmans, Maurice Farmans, Blériots, Deperdussins, and Shorts, including Mr. McClean's land machine, which, like his seaplane, has been taken over by the Naval Air Service. Lord Edward Grosvenor arrived on Tuesday on his Blériot. Mr. McClean has been appointed to the Royal Naval Air Service with the rank of Flight-Lieut., R.N.

* * *

A Brighton correspondent states that the Royal Naval Air Service has taken over the aeroplane tent, launching track and turntable of the Volk Seaplane Station at Brighton, which are to be erected at a naval seaplane station. The tent, which is one of the handiest and neatest yet designed for the purpose, was Mr. Hermann Volk's own invention, and is good enough to be made a standard pattern for naval use. The trackway was built by the Volk Electric Railway people from their own standard materials and works excellently, as has been demonstrated on various occasions when Mr. Fowler, of Eastbourne, has used the station. One hopes that as soon as the war is over the Messrs. Volk will erect their station again and will receive the necessary support from the Brighton authorities to permit them to build a permanent shed on solid ground. The enterprise of Messrs. Volk certainly deserves its reward.

The Curtiss flying boat built for White and Thompson by Saunders for the "Circuit of Britain" has passed its tests very well and has now been taken over by the Admiralty. The Avro "circuit" machine has been out regularly every morning, flying for very long periods. A Blériot land machine flew over the Southampton district from Calshot on Tuesday.

On Wednesday a Sopwith twin-float tractor flew over Southampton Water from Woolston at a great speed. Numerous other machines are constantly flying over the district, usually for about a quarter of an hour at anything between 1,000 and 2,000 ft. This is done many times a day without incident, and evidently the new drafts are getting an immense amount of practice. Mr. Gordon England had the Hamble River, Luke and Co. seaplane out on the Monday.

* * *

Mr. Stanley Adams, who will be remembered for the consistent flying he has been doing for so long on the Lakes Flying Co.'s waterplane, has volunteered for the Royal Naval Air Service and has been appointed a Flight Sub-Lieutenant, R.N.

* * *

On Monday of last week Mr. Fowler flew his Henri Farman waterplane, which had been commandeered by the R.N.A.S., to Calshot. Owing to a north wind he found the air very bad from Beachy Head to Littlehampton, although he flew three miles out. He was chased at Littlehampton by a fast R.N.V.R. launch, but arrived unscathed at his destination.

* * *

It is stated on fairly reliable authority that the Hendon aerodrome, when it passes under Naval control, will be under the command of Lieut. John Porte, R.N., who returns to the Navy as an officer of the Royal Naval Air Service. Mr. Richard T. Gates and Mr. Claude Grahame-White are appointed to the R.N.A.S. as assistants to Lieut. Porte.

MILITARY.

The attention of the public is called to the possibility of messages being dropped from aeroplanes. The messages will be enclosed in a weighted canvas bag, fastened with two spring clips, attached to which are two streamers of blue, red, and yellow cloth, each $4\frac{1}{2}$ ft. long. Any person finding or seeing such a bag dropped from an aeroplane should at once open it and take steps to forward the enclosed message to the person for whom it is intended. One assumes that these messages are most likely to be dropped in the vicinity of places where troops are stationed, and as they are likely to come from coast-patrol air scouts, and to contain matter which should be delivered with all possible speed, one hopes that the finder will take immediate steps to get them to their destination and will not send them by post.

* * *

The Official Press Bureau issued the following on August 20th:—"Mr. William Cain, of Liverpool, has offered for the use of the British Army a Blériot aeroplane, to be called 'The Liverpool.' It is his wish that it should ultimately be presented to the Australian Government in recognition of the support which the Commonwealth is giving to the British Government."

One applauds Mr. Cain's patriotism, but one doubts whether, if the machine is delivered to the Army for use in the present war, there will be much left of it for presentation to Australia afterwards.

* * *

A memorial service for Lieut. Evelyn Walter Copland Perry, Royal Flying Corps, Reserve, and for Air-Mechanic H. E. Parfitt, who were killed on active service, was to be held at St. Thomas Church, Orchard Street, Portman Square, to-day (Wednesday), at 3 o'clock.

* * *

The whole aerodrome at Brooklands has now been placed under Military control. The officer in command is Lieut. Ronald Charteris, Royal Flying Corps (Military Wing) Reserve of Officers. Mr. Charteris is probably better known to those concerned with aeronautics as the managing director of the All British Engine Co., Ltd., one of whose aero-engines, built to an entirely new design by Armstrong-Whitworths, Ltd., of Newcastle, did some unusually fine tests recently.



Above, Mr. R. R. Skene, below, Mr. E. W. Copland Perry, the two R.F.C. pilots who were the first to give their lives on active service.

The Official Press Bureau on August 24th issued among the list of casualties in the British Expeditionary Force: No. 9, Sergeant-Major D. S. Jillings, Royal Flying Corps, wounded August 22nd, progressing favourably.

It seems strange that an N.C.O. of the R.F.C. should be among the first casualties, as N.C.O.s are not employed as pilots, and one would scarcely expect an R.F.C. landing ground to be within range of the firing line. It may be that "wounded" is a misprint for "injured"—in an accident. Or, of course, it may be that the advanced landing ground was within artillery range, and may have been located by hostile aircraft, with the result that it was shelled by the Germans, though out of view. Or Sergt.-Major Jillings may have been hit while a passenger in an aeroplane passing over hostile troops from one landing to another. Or, again, he may have been sent forward with a squad of air mechanics to do a temporary repair to one of our aeroplanes which had

been compelled to come down just behind our firing line, and have been hit then.

* * *

Captain H. F. Wood, who has been in charge of the Aviation Department at Vickers Ltd. ever since that firm began to take an active interest in aeronautics, has been called up to join his regiment, the 9th Lancers, as he has been in the Reserve of Officers since applying himself to aviation. Everyone will wish him a safe return, and the acquisition of distinction while on active service. Captain Wood's department at Vickers Ltd. is meantime being managed by Captain P. D. Acland.

* * *

From the "Gazette" published above one learns that Major H. M. Trenchard, C.B., D.S.O. (now Lieut.-Colonel), has been transferred from the Central Flying School to Farnborough to command the Military Wing, in the absence of Colonel Sykes, who is with the R.F.C. on active service. Colonel Trenchard is in no small measure responsible for the high state of efficiency to which the R.F.C. has been brought. First as Staff Officer to Captain Godfrey Paine, R.N., C.B., Commandant of the Central Flying School, and then as Assistant Commandant, he has succeeded in combining the very varied personnel of the C.F.S. into one homogeneous whole in a way which at first sight appeared almost an impossibility. Soldiers, Special Reservists, Territorials, and civilian aviators all passed through his hands and were turned into properly disciplined military pilots, and in the same way sapper-mechanics and civilian mechanics became efficient soldiers. A rigid disciplinarian, but eminently fair and just in his dealings, Colonel Trenchard has done splendid work, and no more fitting appointment could be made to his present position.

Captain the Honourable Maurice Egerton, son and heir of Lord Egerton of Tatton, is one of the pioneer aviators of this country. He owned a Short-built Wright somewhere in 1909, and has since done a large amount of flying, almost entirely at Eastchurch, on various types of Short biplanes. He has never flown in public, but he has probably spent more time in the air than many professional aviators.

Lieut. I. F. Fairbairn-Crawford is in charge of the aeroplane department of Armstrong-Whitworth's, at Gosforth. He founded and acted for some time as honorary secretary of the Northumberland and Durham Aero Club, which did good work in arranging the Newcastle Control in the first "Circuit of Britain" in 1911. He was formerly a well-known amateur athlete, being chiefly famous as a runner of championship class.

Mr. Arthur Vere Bettington, whose appointment to the R.F.C. is noted, is a well-known mining engineer, of South African origin. He fought in the Boer War, and his father, Colonel Bettington, raised and commanded a regiment of irregular cavalry in the Zulu War of 1879. His brother, Mr. Claude Bettington, was killed with Mr. Hotchkiss in an aeroplane accident at Oxford.

Mr. E. L. M. Leveson-Gower, also just appointed to the R.F.C., has for some time been known as a very able pilot of Blériots. He has recently put a number of new Blériots through their reception tests for the Army, and has managed to act as instructor at the Blériot School the while, a fairly strenuous life.

Among the Gazettes of the 21st appear the names of Mr. B. C. Hucks, the famous exhibition flier, and Mr. H. C. Barber, who will be remembered as the inventor, designer, constructor and pilot of the Valkyrie monoplanes, which were among the best-known machines at Hendon in 1911 and 1912, and were the only British aeroplanes of the "canard" type which really flew.

* * *

BEOR—SEVIER.—On August 15th, at St. Mark's, South Farnborough, by the Revd. B. Phillips, Bertram R. W. Beor, R.F.A., Royal Flying Corps, to Estelle Lilian, only daughter of Mr. and Mrs. Sevier, of Ceylon.

* * *

The Hon. Edward A. Stonor, of the Parliament Office, House of Lords, has joined the Royal Flying Corps.

The Master of Sempill has joined the Royal Flying Corps.

FRANCE.

One gathers that there is considerable activity among the civilian aviators attached to the French Aeronautical Service. A Morane escadrille, including MM. Garros, Bobba and Gilbert, has left for the front, as has a Henri Farman escadrille in which are MM. Verrier and Chevillard. M. Prier, formerly of the Bristol Company, has been doing splendid flying on a Blériot, and is probably by now with the troops. He and M. Pourpe—the latter has been flying a Morane parasol—are to deliver spare machines to the front.

M. Noel is flying a 2-seater Blériot, and has been nicknamed the "pilote anglais" by his fellow-countrymen, who admire his flying very much. Another British subject, besides the Australian, Capt. Watt, who has joined the French Aeronautical Service, is Mr. Howard, an ex-Cambridge man, who was with the Turks during the Balkan war. He is said to be an excellent pilot of Farmans.

The "Morning Post" Paris correspondent relates that on August 18th he met one of the twelve French army aviators who recently flew from St. Cyr to Brussels, where they were to assist the Belgian Army. He was back in Paris for 24 hours on army business, and he gave a thrilling account of his flight. His average height was between 3,000 and 4,000 feet, for there was a constant risk of being fired at in mistake for a German aeroplane. The danger was particularly great in Belgium, where the troops were keenly on the look-out, and there he was under fire, a bullet striking one of the wings. When somewhere near Mons he had descended to about 1,500 feet to take his bearings, he espied a large aeroplane coming up rapidly from the south well over him and steering as though to cut him off. None of his comrades was in sight, for they left St. Cyr at intervals of several minutes, and though alone in his aeroplane he instantly rose and steered straight for the stranger, who, however, did not wait for more, but put about and made off to the south at a rapid rate. From its appearance it was a German monoplane. The Frenchman was flying a Maurice Farman. In Brussels the French aviators had a magnificent reception when they landed in the centre of the city. Boulevards and squares were packed and the authorities vied with each other to offer hospitality. But the Frenchmen went to work at once, all twelve having landed without mishap, and have been making daily excursions over the frontier into Germany. The officer quoted admitted that twice he has been as far as Cologne and Coblenz without mishap, though often fired at. He has seen the masses of the huge German Army concentrated in that region, but is full of confidence and of admiration for the Belgian troops with whose work he has come into close contact.

It has been reported that a "scarab-shaped German aeroplane," white (except for a panel of sky-blue painted across the centre of each wing), flew over Nancy at a height of some 2,000 ft. on this day for about half an hour, then returned over the German lines without sustaining any damage, despite rifle fire. [The only known machine answering to the "scarab" description is the Cedric Lee "secret circle-plane," and one gathers that Mr. Lee recently alighted upside-down, to its serious detriment, so one need have no qualms about it having automatized itself into Germany.—ED.]

It is officially stated by the French War Office that the Zeppelin airship No. 8 was brought down at Badonviller on or about August 22nd. The airship came from Strassburg. Badonviller is about 20 miles east of Lunéville and 40 miles east of Nancy. It is about five miles from the frontier.

A correspondent of the "Exchange" Co. reported from Paris on August 20th as follows:—

"I have just seen M. Pégoud, the inventor of looping the loop, at the Ministry of War, where he was receiving the congratulations of the War Minister. He has come to Paris to obtain a new aeroplane, his own having been riddled through the wings by ninety-seven bullets and two shells. Pégoud has made a daring raid for 300 kilometres into German territory. He did not tell me where he went to, but simply said that he crossed the Rhine with an officer-observer and blew up by means of bombs two German convoys. Captain Finck, he stated, succeeded in destroying the Frascati hangar near Metz, where there was a Zeppelin, which was wrecked. He also destroyed three Taube aeroplanes which were in the hangar."

[It will be remembered that the Metz airship sheds had

already been destroyed, or reported as destroyed, by Lieut. Cesari. How M. Pégoud saw "three Taubes" inside the shed is also not quite clear. One shell which "riddled through the wings" would have been more than enough for one aeroplane, so the other shell and the 97 bullets seem an unnecessary piece of romance. Also, Lieut. Nestoroff, of the Russian army, "looped" long before M. Pégoud. Altogether, it appears either that M. Pégoud has become a first-class leg-puller, or that the Exchange Co. needs a new correspondent, or both.—ED.]

A correspondent of the "Morning Post," recently in Northern France, writes:—

"The admiration of our Allies extends to the matériel of the Expeditionary Force, from the fleet of motor-vans to the scores of aeroplanes, which, until a few days ago, were ranged in neat lines on the aviation-ground. The latter, by the way, accomplished a most creditable feat in arriving, mostly on one day, without a single mishap, except for the rumoured loss of one aviator, who is said to have lost his way and fallen into the hands of the Germans. [Which would indicate that the R.F.C. was very far north indeed.—ED.] It is regrettable that there should have been an accident to a machine during a practice flight last Sunday, involving the loss of two valuable lives, but the public has grown accustomed to such calamities even in time of peace."

The "Times" reported that a German monoplane flying French colours let fall three bombs over Lunéville on August 18th at a height of about 1,500 yards. The projectiles fell into a public garden without causing an accident to anybody. The material damage was insignificant.

The "Figaro," of Paris, reports a striking incident, the hero of which is a cavalry officer, and one of the leading French aviators. The officer was returning from a long reconnaissance, and owing to a breakdown had to land while still a dozen miles from the French frontier. On examining the machine the officer found that it could not be repaired, and at the same time he saw a German lieutenant followed by his Uhlans. Hurriedly breaking the pipe of the petrol reservoir, he stood upright before his machine. When the officer reached him he shot the German dead at short range, set fire to his own aeroplane, which had been saturated with petrol, and galloped off on the German's horse. The Uhlans, less well mounted, were left hopelessly behind, and he reached his own lines in safety. [To be perfectly impartial, this seems rather like shooting a soldier after one has surrendered to him, and is likely to lead to all aviators being shot at sight instead of being made prisoner in case of such a breakdown. It was, of course, plucky and showed wonderful presence of mind and quickness, but its judiciousness may be doubted.—ED.]

Reuter reports that two famous duellists, M. Breitmayer and M. Rouzier-Dorcieres, have enlisted in the aviation arm, and will be employed to work quick-firing guns on board armoured aeroplanes. [M. Rouzier-Dorcieres is a middle-aged and somewhat stout gentleman, who practically retired from the duellery trade some time ago, since when he has been chiefly employed in acting as honorary judge on points of honour between his acquaintances. With all due respect for his undoubted courage, and his infallible eye and hand, one scarcely fancies him as an aeroplane gunner.—ED.]

M. Doumer, who has been a candidate for the Presidency of the Republic, and has been Governor of Indo-China and Minister of Finance, recently returned from the war area in Belgium. He stated on August 18th to a Press representative that three Zeppelins were destroyed in Belgium, and that another fell in a forest and was wrecked.

GERMANY.

Rumours tell that the manager (Mr. Wiener) and the technical constructor and chief pilot of the Albatros Co., Johannisthal (R. Thelen), have been shot, because the firm would sell aeroplanes to foreign States; the fact is only that when the European war began, three of the company's pilots were in foreign lands to demonstrate the Albatros biplane: Leo Roth in Austria, Loessl in Italy, and Wieland (and his passenger the Danish pilot Pollner) in Denmark and Sweden.

The official list of killed, published by the Ministry of War in the German papers, includes in list No. 2 one name from the air troops: Lieut. Yahnow, who was shot down, broke his

skull and died (published August 15th). The lieutenant was known as one of the two German officers pilots engaged in the Balkan war on Turkey's side.—Hr.

BELGIUM.

An American journalist, who escaped from Germany, states that when the entrenched German forces at Liège found themselves unable to capture that town they sent up an aviator after dark, who dropped bombs on the forts from a height of about 3,000 ft., and attached to his aeroplane a 200-ft. rope, at the end of which he hung a red lantern to avoid making himself a target for Belgian shot. The lantern, he alleges, was smashed, leaving the aeroplane unhurt, while some of the bombs dropped from the aeroplane are claimed to have put certain guns on the fort out of action. No official information of this has been received.

[The idea has points. A really good bright light shining directly downwards under a reflector would be enough to prevent the silhouette of the aeroplane being seen against the stars. It has, however, the objection that the bull's-eye of a target is less often hit, except by prize shots, than any other part of it, so if one is within range it is better to be fired at than to be near someone else who is conspicuous. I recall a friend of mine who always rode a white pony in South Africa and was never hit, though no one else dared to ride within 50 yards on either side of him if there was any sniping going on.—ED.]

There was great excitement in Antwerp on the evening of the 22nd, when large numbers of people rushed from the cafés to watch an aeroplane race. Mr. Edgar Rowan states in the "Daily Chronicle" that a German aeroplane was encircling the town at a great height, apparently examining the fortifications and defences. A Belgian aeroplane ascended in pursuit, but the German escaped to the south-west.

It is reported that a German aeroplane with two officers on Saturday appeared above Asche, near Termonde (midway between Ghent and Mechlin). It caught fire and smashed to earth, killing both officers.

The "Morning Post" correspondent, writing on the 22nd from Antwerp, says:—

"I am urged to careful discretion regarding all military movements. It will not be departing from that to record the substance of a report made to me by an aviation officer of a reconnaissance on the German lines to-day. He tells me that the Germans are not moving north to any extent, but that their mass has turned south."

On Monday morning of last week the population of Brussels was awakened by the noise of artillery, and the populace was terror-stricken, believing that the Germans had arrived. People rushed into the streets, and it was some time before they were reassured. They then learned that aeroplanes had been sighted some distance from the city, and were being subjected to a hot bombardment from all arms. Their fate is unknown.

Reports state that German aviators were still dropping bombs on Namur on Tuesday of last week.

It is reported that on August 18th a German advance guard had pushed forward in the neighbourhood of the Belgian positions near Diest. A surprise attack upon the Belgians might have been made, had it not been for an aviator, who discovered their position, made an estimate of the numbers of the enemy, and was able to warn the Headquarters Staff in time. Cavalry were sent forward and the Germans retired.

A Belgian aviator-officer, being asked to give his personal impression of the situation, declared that the Allies of Belgium had kept all their promises.

A cable from Flushing, dated August 24th, states that a constant procession of German aeroplanes is flying round Brussels, signalling to the troops with rockets.

A message on August 25th reports that a Zeppelin dropped bombs on Antwerp during the night of the 24th, damaging several houses near the Royal Palace, and killing 7 people.

The "Evening News" says the airship was brought down by artillery 6 miles from Antwerp and its crew captured.

HOLLAND.

On August 20th, near Oostburg, in Zeeland, Dutch frontier guards fired on a German aviation officer coming from Belgium. As the aeroplane was struck, the aviator was obliged

to descend. The German officer was disarmed and arrested. [This action seems quite sufficient "casus belli" for Germany in her present mood. It will be well to remember Mr. Whitaker's note last week on the massing of German troops from Rheine at Ochtrup and Bentheim on the Dutch frontier.—Ed.]

With reference to the paragraph published last week, it is further reported that the two German aviators were Oberleutnant Kleynn and Ensign Fischer, who, after reconnoitring from the Isle of Borkum, had to come down on Dutch territory. They have been sent to the camp near Alkmaar, escorted by Captain V. D. Akker. Both German officers belong to the Naval Flying Corps. [This, in conjunction with our Danish correspondent's note on the Zeppelin's visit to Esbjerg (20 miles from the German frontier and 120 from the mouth of the Kiel Canal) on a patrol from Heligoland, seems to indicate that a very careful watch is being kept by air over the approaches to the Elbe.—Ed.]

A Zeppelin was fired at by Dutch troops near Zevenaar on the night of the 20th, the same airship having passed over Maestricht, thus violating Dutch neutrality.

RUSSIA.

An Austrian aeroplane with an officer and a soldier was captured on August 19th near the station of Balin, on the Podolia line.

A report on August 20th from Petersburg says that the enemy (the Germans) "made use of aeroplanes, one of which was seen above Suwalki and was brought down by our infantry and fell in a swamp near Augustowo, where it was caught by Cossacks. The airman was wounded, but his machine was uninjured." [One has heard of the gigantic Cossack who slew 25 Germans with his own hand, but what must one think of Cossacks who can catch a falling aeroplane? They must have made a good catch, too, for one reads that the machine was uninjured.—Ed.]

DENMARK.

All the Scandinavian lands, eager to uphold their neutrality, strengthen the forces, and thus too their military and naval aviation. And now that they are unable to buy in foreign lands, they are busy engaged in their own lands. In Denmark the voluntary Polytechnic Flying Corps has bought a private Henri Farman biplane and a 50-h.p. Gnome engine from the Navy, and is busy engaged building two modern Henri Farman biplanes. The Army has bought a 70-h.p. Renault motor, formerly belonging to the killed Navy aviator Ulrik Birch, from the Navy for a Danish Maurice Farman biplane being built.

Some trial flights have been made with the new Caudron biplane; on the first flight the motor stopped, so that the pilot, Lieut. Ussing, was forced to land in the water on the beach of the aerodrome, and later on, when Lieut. Grut made a flight to state the consumption of petrol, he made an involuntary loop and fell from 15 metres, himself escaping unhurt, but damaging the tail.—Hr.

NORWAY.

The balloon pilot, Mr. Cetti, has given his private balloon "Scandinavia" to the military authorities and offered his own services as a pilot.—Hr.

U.S.A.

The "Times" correspondent has wired from Washington. "This is a sample of the war news Germans in the United States are supplied with. It is from the New York 'Staats Zeitung,' which every day since the outbreak of hostilities has savagely denounced the American Press for colouring its news and misrepresenting facts:—

"We have very favourable news, it says, from private letters concerning the Zeppelin airships. The question has often been asked: Where are the Zeppelins and what are they doing? The following information received in a private letter speaks for itself: 'Every night the Zeppelin airships go out to the North Sea and when they return there is an English battleship destroyed. Nineteen English battleships have been destroyed so far.'

"This is the second time the 'Straats Zeitung' has destroyed the British Fleet. A few days ago it sunk seventeen ships. Its rival, the 'Herold,' which must not be confounded

with the 'Herald,' has been more modest, and so far is content with having placed four battleships in the Humber hors de combat."

Additional particulars are published in "Aero and Hydro" as to the requirements of the U.S.A. army for machines in the competition to be held at San Diego next October.

All tests are to be made with pilot and passenger with sufficient dead load to make up 450 lbs., and with four hours' fuel on board. Air brakes, etc., will be allowed in the landing tests. The pilot must maintain a uniform height from the ground during speed tests. Where more than one attempt is allowed, the best effort will be credited and not the average. Points will be awarded for the following features:—

- (1) Construction and workmanship; (200 marks) determined by examination, study of stress diagrams, etc.
- (2) Speed, maximum, 70 m.p.h. required; (100 marks) measured over course, 3 flights each way; (3 trials allowed) for speeds in excess of 70 m.p.h. additional points will be given at rate of 4 points per mile over.
- (3) Speed, minimum, 40 m.p.h. required; (100 marks) measured over course, 3 flights each way; (3 trials) for speeds below 40 m.p.h. additional points will be given at rate of 2 points per mile under.
- (4) Climbing, 4,000 ft. in 10 mins. required; (100 marks) flying start, competitor to fly parallel to ground and close to it before attempt; (3 trials) for each 100 ft. over 4,000, covered in 10 minutes' climb, competitor will be allowed 5 points additional.
- (5) Suitability of landing gear; (100 marks) manoeuvring on ground under power, starting from and landing in ploughed and rough ground; best machine will be given perfect score, others rated accordingly.
- (6) Gliding angle, minimum 1 in 6; (75 marks) after flying level at specified height, competitor will cut engine out at given signal and descend in given direction; (3 trials) ten points for each additional foot in excess of that required, namely, 6 ft. of advance for 1 ft. descent.
- (7) Inherent stability; (75 marks) determined theoretically and practically; best machine will be given perfect score, others accordingly.
- (8) Ease of manoeuvre in air; (50 marks) the board will prescribe certain evolutions to competitors; best machine will be given perfect score, etc.
- (9) Field of vision; (50 marks) determined from practical observation by military observer; best machine will be given perfect score, etc.
- (10) Ease of assembly (not more than 2 hours for 4 men); (25 marks) practical test on field; best machine will be given perfect score, etc.
- (11) Ease of disassembly (1½ hours, 4 men); (25 marks) practical test on field; best machine will be given perfect score, etc.
- (12) Ease of installation and repair of motor, etc.; (25 marks) practical test on field; best machine will be given perfect score, etc.
- (13) Landing over 30-ft. obstacle and pulling up in field beyond; (25 marks) practical test on field; (3 trials allowed), best machine will be given perfect score, etc.

News of the R.F.C.

By now letters will be arriving in quantities from officers and men among our troops. Any readers of THE AEROPLANE who receive letters relating to the Royal Flying Corps will be doing a service to aviation generally if they will communicate some of their news to this paper.

It is not likely that anything of a nature likely to give away the position of our troops will be allowed to pass the Censor at the front, but in any case the greatest care will be exercised to prevent two and two being put together by people on the look-out for information which should not be published. It is also probably desirable that the names of the writers should be withheld and care will be exercised in this respect. Not only will news of the Flying Corps be of interest to everybody concerned with aviation, but it will also be appreciated by those who have not been fortunate enough to hear from their friends at the front.

The Accident on the Continent.

On Thursday of last week it was made known that Mr. E. W. Copland Perry and an air-mechanic named Parfitt were killed in an accident during a practice flight on August 16th. At the moment of going to press, nothing has been made known by the Official Press Bureau, but it is singularly unfortunate that such an accident should have occurred so soon after that which killed Mr. Skene and his mechanic Dorland. Both appear to have been caused by overloading.

Evelyn Walter Copland Perry was born in London on December 4th, 1890. He learned to fly at Hendon on a Valkyrie monoplane during 1911, and took his certificate on one of those curious "canard" machines, the certificate being granted on September 12th, 1911. Thereafter Mr. Perry joined the Royal Aircraft Factory staff and did a considerable amount of flying on the early experimental machines turned out by that establishment, including testing a hydro-biplane at Fleet. When he left the R.A.F. he joined Mr. Sopwith, and flew very well on his old Burgess-Wright with the Gnome engine. He left Mr. Sopwith to take an Avro biplane to Portugal, where he put the machine through its tests for the Portuguese Army. In the course of these tests he flew over Lisbon, and eventually landed, owing to engine failure, in the Tagus. Readers of this paper will remember the photographs of Lisbon taken by Mr. H. V. Roe during this trip, and by Mr. W. H. Sayers, who was also of the party.

When he returned to England, Mr. Perry, in conjunction with Mr. Beadle, also formerly of the R.A.F. staff, started to build aeroplanes on his own account, and produced at Beaulieu, in the New Forest, a small biplane, on Avro-cum-B.E. lines, but with many original points, and the machine flew extremely well. Later he flew it at Cowes.

Prior to this period, Mr. Perry had the misfortune to lose his father, and as a result he came into a considerable amount of money, with which he set about establishing a proper aeroplane factory in works at Twickenham. He produced the somewhat strange-looking, but interesting and beautifully made flying boat, which was one of the features of the last Olympia Show. Only a couple of weeks ago this boat was sent to the Eastbourne Aviation Co.'s sheds to be tested. He also built a small biplane on B.E. lines, but with a 35-h.p. Anzani engine, and this showed distinct promise, though never handled by an experienced pilot.

On August 14th, 1913, Mr. Perry was appointed to the Reserve of the Royal Flying Corps, and he was called up for service a week or two ago, when the R.F.C. was mobilised. Somewhere about two months ago, Mr. Perry broke his leg with the starting handle of a car and was on crutches until quite lately. He was still limping from the effects of the breakage, and it was somewhat strange that he should have been passed by the medical officer as fit for service.

One learns that Mr. Perry was flying a "B.E.8," a biplane with staggered planes and an 80-h.p. Gnome engine. Apparently the machine stalled at about 150 feet. The pilot tried to get the nose down, but was too late to straighten the machine and flatten out.

The loss to the country is the greater because Mr. Perry combined the possession of brains and money, and would have aided the progress of aviation to a notable degree. Personally he was immensely popular, for his ready wit and unflagging cheerfulness made him welcome wherever he went. Mr. Perry was an only child, and to his widowed mother everyone will offer the deepest sympathy.—C. G. G.

More Avro Expansion.

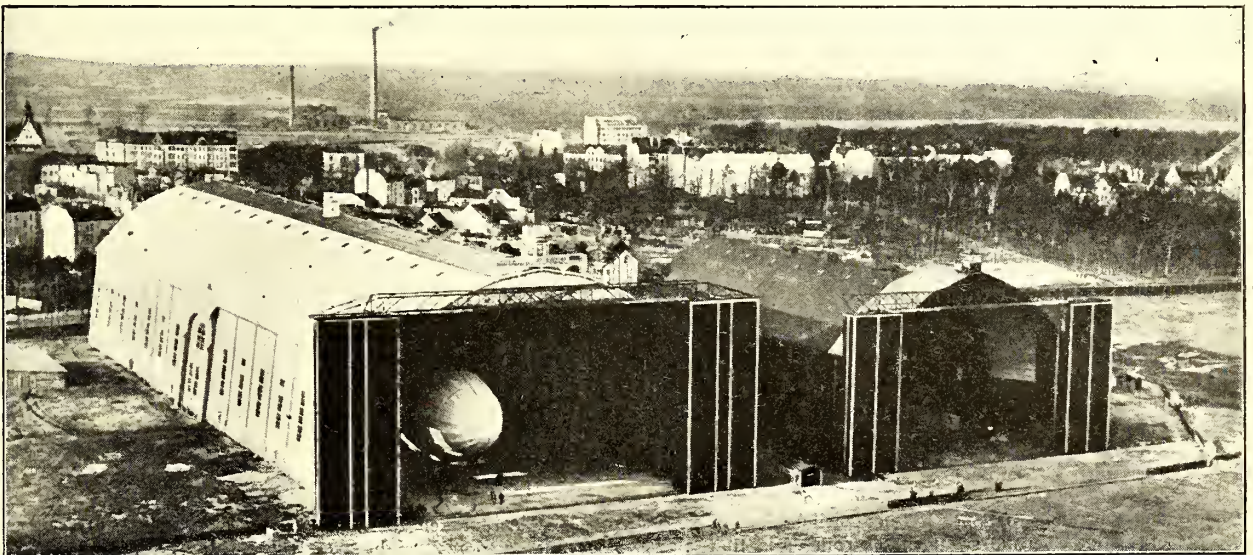
It is in times of stress such as these that those who have done good work in spite of adverse circumstances begin to come into their own, and it is therefore pleasant to be able to record that A. V. Roe and Co., Ltd., are so busy turning out aeroplanes, both land and sea going, that the new works they recently acquired at Miles Platting, Manchester, are already too small for their needs. As a result the neighbouring firm of Mather and Platt, whose name is world-famous among engineers, have kindly placed at the disposal of the Avro firm a goodly portion of their premises.

Mather and Platt naturally wished to do anything in their power to help the country and it is certainly patriotic on their

part to give such practical assistance to a firm which is supplying our fighting services. The high efficiency of the standard 80-h.p. Avro tractor seems to be now meeting with adequate recognition.

Petrol Prices.

The distributors of "Shell" motor spirit announce that in arrangement with the Society of Motor Manufacturers and Traders no more than the following prices shall be charged by their members to the public in England and Wales:—"Shell," 1s. 9d.; "Shell II," 1s. 7d.; "Crown," 1s. 6d. Motorists will oblige by advising this paper immediately if the prices charged are in excess of the above. It is imperative that cans should be returned immediately they are empty.



Another view of Johannisthal from above, a companion picture to that published last week. The double shed for Zeppelins is on the left. A large biplane may be noted in the right foreground, and gives an idea of the size of the sheds.

Materials of Construction: Some Tests on Timber.

BY A. C. BURGOINE.

Although aeroplane builders have a very wide field from which to make their selections of materials for constructing their machines, they are more closely restricted in their freedom of choice than are many other workers in wood and metal, being ever faced with the necessity of reducing to the uttermost the dead weight of their structures. Apart from considerations of cost (which hardly apply at all in aeroplane work) the designer of such a structure as a bridge need not worry in the slightest about the dead weight of his job, for he need but use a sufficiency of material to allow for this; the naval architect must provide sufficient displacement in his design to carry the vessel and her load, but he can "pad out" to any extent necessary. In the one case the load is carried on mother earth, in the other by the water: an aeroplane, on the contrary, has to carry itself by reaction due to its own power output, so that any addition beyond certain limits to the weight of material in the whole structure may render the machine inert.

Any material used in aeroplane work, then, must be considered in regard to its properties of strength for weight, and absolute strength alone becomes a rather fallacious measure of value for any given purpose. Not only must strength be considered in relation to weight, but the behaviour under load and the general characteristics of a material must be looked to; a species of wood, for example, may be stiff enough but greatly lacking in resistance to crushing; or it may not hold fastenings well enough to make it suitable for use in some positions.

Silver spruce is one of the most generally used timbers for aeroplane work, being light and stiff, but lacks many of the qualities desirable in a timber for all-round work. Teak is excellent as regards strength and stiffness, but is dreadfully heavy, and apt to be brittle when over-stressed. The designer's task, then, is to use his judgment so that he may select material that, by its nice balance of physical properties, will best meet the requirements of each particular case.

Regarding metals, there is a large amount of data available, and every steel or alloy maker will provide designers with the fullest information as to his products: with timber, however, the case is somewhat different, for comparatively little has been published on the subject, and much of that but generalisations worked up from older matter.

Having recently made a large number of careful tests on a variety of woods in general use, the writer believes some notes on the results obtained may not be without interest to aeroplane designers and others whose lot it is to handle timber in light constructional work. It is not claimed that the tests made show so conclusively the absolute strengths of the materials tested that one may accept the results as classic: but they do afford a certain amount of information that should be of service. For one thing, all the tests were made on selected stuff of best quality, whereas many other tests that have been made have been on less perfect specimens that would not be admissible in aeroplane construction.

Tests that Matter.

It is generally accepted that timber will not be used in direct tension for any purpose, though it occasionally happens that a member which is normally in compression may be put in tension by some change in the loading of the machine—as when looping. A strut that is so turned into a tie will usually have more than ample section to carry any load that may be imposed upon it, the weak link being the fastenings of the end sockets or other fittings that transmit the pull. As such fittings are almost invariably fixed by through bolts or rivets, or by screws, the resistance to splitting along the line of grain becomes the determining factor.

Very few figures are obtainable as to the strength of timber in this direction, so tests have been made in order to supply the deficiency, and references hereafter to "cross-tensile" strength must be held to apply to the tensile strength across the line of grain. Tensile strength, of course, is that along the main grain; compressive strength is that in the reverse sense along the grain; shear resistance is taken across the grain—as in shearing the end off a length of stuff.

As struts never fail in practice through lack of compressive resistance, but always through flexure and the consequent over-stressing of the fibres; and as much wood is disposed as beams, or as combinations of beams and struts, the most useful figure in regard to timber is one that will indicate its value as a beam. At the same time, for most purposes, the mere strength without any information as to stiffness is not very useful to know, so any test results should show both strength and stiffness if they are to be of service. Then, again, it does not follow that the ultimate, or breaking, strength of timber is a safe measure of its value, for it may have a limit to which it may be stressed without permanent damage far below the breaking point—just as steel has its "elastic limit" beyond which further loading will cause permanent set or distortion. In point of fact, every wood tested has a well-defined elastic limit or yield point, some specimens showing an absolutely sharply marked one, while others have less definitely indicated yield points.

How the Tests were Made.

In the tests of beams mentioned, the specimens tested were got out to a nominal 0.75 inch square in section, and loaded centrally on supports 24 inches apart, the load being applied on a piece of hard wood 1 inch long so that there should be no actual nipping or local crushing due to the concentrated load. As a matter of fact, tests with and without this load

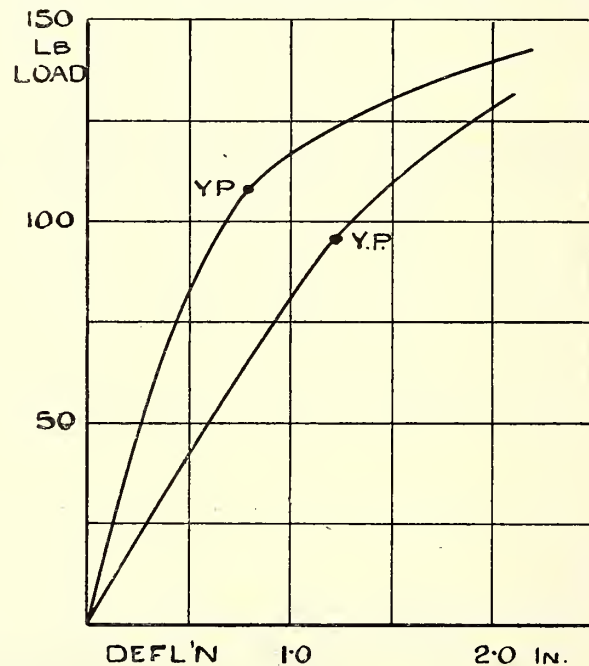


Fig. 1.

distributing piece of wood showed no difference in the results obtained, every specimen tested failing by bursting on the tensioned side before the crushing on the other had any deleterious effect. Each specimen was measured by micrometer to 0.001 inch in the neighbourhood of the load point, and the necessary corrections made by calculation to cover any deviation from standard size. In the case of the cross-tensile tests, the actual fractured sections were measured after breakage.

The deflections of beams were measured at each 10 lbs. of load, and at each 5 lbs. near the yield point; and particular note was taken of the direction of the grain in each specimen tested—tests being made with the sectional grain in line with, across, and diagonal to the load. Of course, a number of pieces were tested each way and in each wood, and the greatest care taken to ensure all being fair and square tests, so that averages might be struck pretty closely. Actually, there was remarkably little variation in the behaviour of the various test pieces of each kind of wood, for all of each set had been taken from the same stock and were alike in quality;

there was, however, a great deal of difference between pieces taken from different stock—as was only to be expected. At the same time, equally good stuff, about equally seasoned, and with similar grain, even if cut from totally different logs, showed really remarkable similarity of strength and stiffness; the variation came in where one lot had been longer seasoned, or was of greatly different specific gravity. By the way, given equal dryness, the weight of a wood is a pretty fair measure of its strength, especially with English timber like oak and elm; but the direction of grain has a great deal to do with the strength in any one direction.

Load-Deflection Curves.

The results of the tests of every specimen were plotted in curves, and it is noteworthy that in many cases the curves for two or more pieces of the same wood tested under similar conditions came out as a single line: there might not be more than one or two per cent. variation in loading for a given deflection, or in the breaking or yielding loads. With some woods the results were practically the same whichever way the grain was set, with others there was a great deal of difference. For example, in the case of a certain set of kauri pine specimens tested, the averaged curves of loading and deflection were as shown in Fig. 1, the higher curve corresponding to the tests with grain across the line of loading

With the grain across the load, the yield point was some 12 per cent. higher, and the deflection but two-thirds of that with the grain in line with load. Of course, the main grain ran longitudinally of the beam; that referred to here is the grain seen in cross-section, known as the "year marks."

A noticeable feature of these curves is the difference in their general shape: one is practically two straight lines with a kink in it, the other curved throughout. When a great number of tests are plotted and a single curve drawn, these features tend to merge into one another somewhat, and the resulting lines are much fairer in appearance. Possibly, such kinky curves as those in Fig. 1 relate to exceptional pieces of wood, but the fact that such curves are obtained at all shows how fallacious it is to base any assumptions upon the ultimate strength of a material instead of upon its yield point resistance. Average kauri pine, for example, carries only about 75 per cent. of its ultimate load at its yielding point, and the deflection is then but 50 per cent. of that at breaking load. Some specimens of most woods appear to give up the ghost entirely at the yield point, and never recover themselves at all; others will recuperate to within quite a little of their original strength if allowed time to do so, Canadian rock elm being quite the best in this respect.

(To be continued.)

Aeronautics in Australia.

On June 30th Capt. Penfold, the Australian aviator and aeronaut, made a drop from a jib crane which was fixed on the top of a twelve-storey building in Sydney, as mentioned last week. He writes that it was about 190 feet from the top of the crane to the roadway and 160 feet from where he hung suspended below it. He says that the width of the "landing-ground," that is from building to building, was 31 feet. The parachute, which was hung from the hook on the end of the crane wire, opened like a fan, but in swinging down just caught a beam in the building under construction. This sent the parachute onto the parapet of the house opposite, but he landed quite safely. The parachute was cleverly photographed in mid-air by Mr. Kimbel, of the "Sydney Daily Telegraph." The parachute is specially designed to open quickly, and it apparently does so as soon as it begins to move.

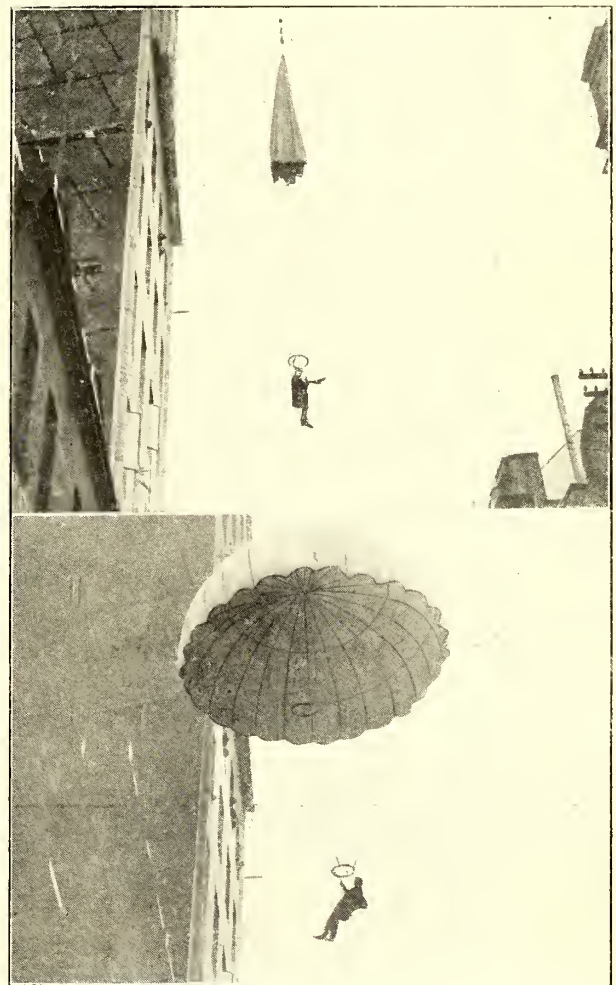
Capt. Penfold also writes that Mr. A. J. Roberts took his dirigible up on June 4th, at 2.15 p.m., when there was a slight wind of about 5 m.p.h. blowing. He went up alone, with about 80 lbs. of ballast. About 10 seconds after he started the engine stopped and the balloon drifted towards the harbour at about 1,500 feet, pursued by Capt. Penfold in a taxi. Mr. Roberts skilfully brought the machine down in a street with houses on one side of him and telegraph wires all round.

For All Things in Aluminium.

At this period, when everything in the way of material for aircraft is in great demand, it would be well for manufacturers to remember that aluminium and aluminium alloys can be obtained promptly and of the best quality from Mr. Robert Coan, 219, Goswell Road, E.C. Apart from ordinary aluminium castings—one may remark that Coan castings are of the cleanest possible—Mr. Coan has a special method of repairing broken aluminium castings so that they are as good as new. He is also able to supply aluminium sheets, tube, and rod, in numerous sizes and gauges from stock.

A New Rumour.

Apropos rumours in general, the rumour of the landing of German prisoners in Londonderry (a pure invention), which was published in this paper on the 19th, and written on the 16th, coincides curiously with a statement which appeared in most newspapers on the 20th, to the effect that a party of German prisoners taken from trawlers had been landed at Cromarty. A reader of this paper writes that the same evening a neighbour came to him and told him that the Germans had landed in force in Scotland at Cromarty and were doing immense damage to the country, and he was anxious to know whether our correspondent thought they would reach London. This is another example of how rumours grow, and shows why the Official Press Bureau should pay attention to them.



"Captain" Penfold, otherwise Mr. Vincent P. Taylor, the Australian aviator, balloonist, and parachutist, is here shown starting for and during the parachute drop from a 12-storey building in Sydney, N.S.W., which he describes in the accompanying paragraph.

Notes of the Week.

It will be good news to those who have for a long time believed in the ability of Mr. Howard Flanders as a designer and constructor to hear that he has now joined the staff of Vickers Limited. He returned quite recently from a voyage round the world and is now in better health than any time during recent years, and is therefore thoroughly fitted to undertake his new work. The early monoplanes built by Mr. Flanders were, in their day, particularly good flying machines having an exceptionally big speed variation. The little biplane which he built just before the motor-cycle accident which has laid him up for twelve months, has proved itself to be one of the most efficient biplanes yet built in this country, and one feels sure that the Vickers firm will now turn out something really good. Mr. Flanders is to be congratulated on thus at last obtaining his opportunity, and he should prove a valuable acquisition to the staff of Vickers Limited.

Mr. F. Warren Merriam, who has so long acted as instructor at Brooklands for the Bristol firm, has now joined the Grahame-White Co.'s staff as instructor at Hendon. He has been responsible for passing a very large number of pupils through their certificate tests, and his experience should be very useful to his new firm.

Mr. R. F. Macfie, who left the United States immediately on the declaration of war in order to make himself useful to his country, arrived in London last week. As the Royal Flying Corps has a sufficiency of pilots he is not likely to go on active service, but his ability in handling men and his experience of engines should be utilised to good account in some way. Like all those who have been in America, he says that aviation in the United States is practically non-existent, and that such aeroplanes as do exist are quite hopeless in design and construction. Nevertheless, he believes that in time aeroplanes will be largely used in America.

It is only by the accident of war that Mr. Macfie is not now a fairly senior officer in the Navy, for he passed through the Naval Engineering College at Keyham at the same time as several officers who now hold high rank in the R.N.A.S., but instead of joining the Navy, after finishing at Keyham, he went out to South Africa at the time of the war as a Volunteer with the Army, and so deprived the senior Service of a clever engineer.

Several well-known aviators who gave up flying some time ago, have joined the Army, and are now doing duty with their cars driving officers on important missions. Among them are Messrs. E. V. Sassoon, Oscar Morison, James Radley, and W. B. R. Moorhouse.

Charles Carroll, who at one time was an assistant to the late Mr. S. F. Cody, was shot by a London Territorial sentry on August 20th. He was examining an Aldershot railway bridge, and was challenged six times by the sentry before the latter fired. Carroll, who was almost stone deaf, died next day.

The Week's Work.

Weather Reports for Week Ending August 22nd.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon	Fair	Fair	Dull	Fair	Fair	Windy	Dull
Eastbourne	Windy	Windy	Good	Good	Good	Good	Good
Eastchurch	Fine	Fine	Fine	Fine	Fine	Fine	Fine
Southampton...	Fine	Fine	Fine	Fine	Fine	Fine	Fine

Flying at Brooklands.

One is glad to hear from a correspondent at Brooklands that Mr. Pemberton Billing has produced an aeroplane which flies. Mr. Billing has been closely connected with the aeroplane industry since early in 1909, if not as far back as 1908, and the older hands in the trade will remember his enterprising venture at Farnbridge when he acquired possession of a tract of land and some buildings, subletting the use of it to Mr. Seton Karr and Mr. Weiss.

The prolonged pertinacity which has now produced a successful flying machine is to be highly commended. Comparatively recently Mr. Billing obtained possession of some large sheds close to the floating bridge at Woolston, Southampton. Part of these have since been taken over by the Sopwith Aviation Company, and presumably the successful aeroplane was produced in the other portion.

The machine in question bears a general family resemblance to the Sopwith scouts, which were originally nicknamed "tabloids," except that the planes are not staggered, and it is driven by a 50 h.p. Gnome engine. The first test flights were made by Mr. Victor Mahl, the well-known Sopwith pilot, and Mr. Jack Alcock has also flown it. Its speed is thought to be about 70 m.p.h. One hopes to see further successful machines of this sort produced from Mr. Billing's section of the works.

Flying at Shoreham.

The aerodrome has been the scene of great activity during the past week, various squadrons of the Royal Flying Corps having visited the Aerodrome, in all about 40 machines. On one day as many as nine machines all arrived within a few minutes of each other. On Sunday of last week, the 16th inst., Lord Edward Grosvenor arrived on his Blériot, but, owing to the strong wind prevailing, he was unable to leave until the 18th inst. The wind was then blowing at 40 miles per hour.

A record number of pupils have joined the school run by Messrs. Pashley Bros. and Hale. It is proposed to erect sea-plane sheds, so that machines can be handily launched into the river before proceeding into the open sea.

School Reports.

Hendon.—AT GRAHAME-WHITE SCHOOL.—Instrs.: Messrs. Manton, Winter, Lowe and Russell. Pupils with instr: Messrs. Whitehead, Morgan, Hope-Vere and Mumby (new pupils), Crowe, Greenwood, Carabajal, Strickland, Easter, Stalker, Wyles, Hawkins, and Lister. Strts alone: Capt. Upton, Messrs. Courtney, Wyles, Lister, 8's or circs alone: Messrs. Palmer, Courtney and Capt Upton. Certificates taken: Messrs. Palmer and Courtney. Machines: G.-W. School biplanes.

AT HALL SCHOOL.—Owing to many pupils having received commissions in Royal Flying Corps there has been little practice during past week. Advantage has been taken of lull to overhaul school machines and make things ship-shape for new pupils. Messrs. J. L. Hall and Clappen were out repeatedly doing circuits and testing machines. Messrs. Robert Pinniger and Amelie Cini made improving straights on No. 2 Caudron.

AT BRITISH CAUDRON SCHOOL.—Instructor: Mr. R. Desoutter. Pupils with instr.: Messrs. Henderson, Johnston, Dudson and Legh. Strts alone: Mr. Abbott. Machine: Caudron biplane, 60 h.p.

AT BEATTY SCHOOL.—Instructor: George W. Beatty. Pupils with instr on machine: Messrs. Cheung (16 mins.), Ruffy (8), Roche-Kelly (25), C. Smith (23), Leong (10), Hodgson (12), Bankes (8), Whittaker (20), Lord (37), Hornby (20), Gardner (5), Virgilio (10). Machines: Wright dual-control 50-h.p. Gyro.

Eastbourne.—AT E. A. C. SCHOOL.—Instr.: Mr. F. B. Fowler. Pupil with instr.: Mr. Cornish (new pupil) Thurs. 8's or circs alone: Mr. Hardstaff, Wednes. morning. Mr. Bass Sutton, Wednes. and Thurs. mornings and Thurs. night. Certificate taken by Mr. Hardstaff, Wednes. night and Thurs. morning. 8's and volplané 400 ft.; landings excellent; shows great promise. Machine: E.A.C.

Shoreham.—AT PASHLEY BROS. AND HALE.—Instrs: Messrs. E. and C. Pashley and B. F. Hale. Pupil: Mr. C. Winchester (15). 8's or circs alone: Messrs. W. Purnell (17), E. Roberts (18), J. Woodhouse (15), C. Rutlen (17). Certificate taken by Mr. W. O. V. Purnell. Machine in use: Pashley biplane. Mr. Purnell passed tests on August 21st in excellent style; he has been at the school only nine days.

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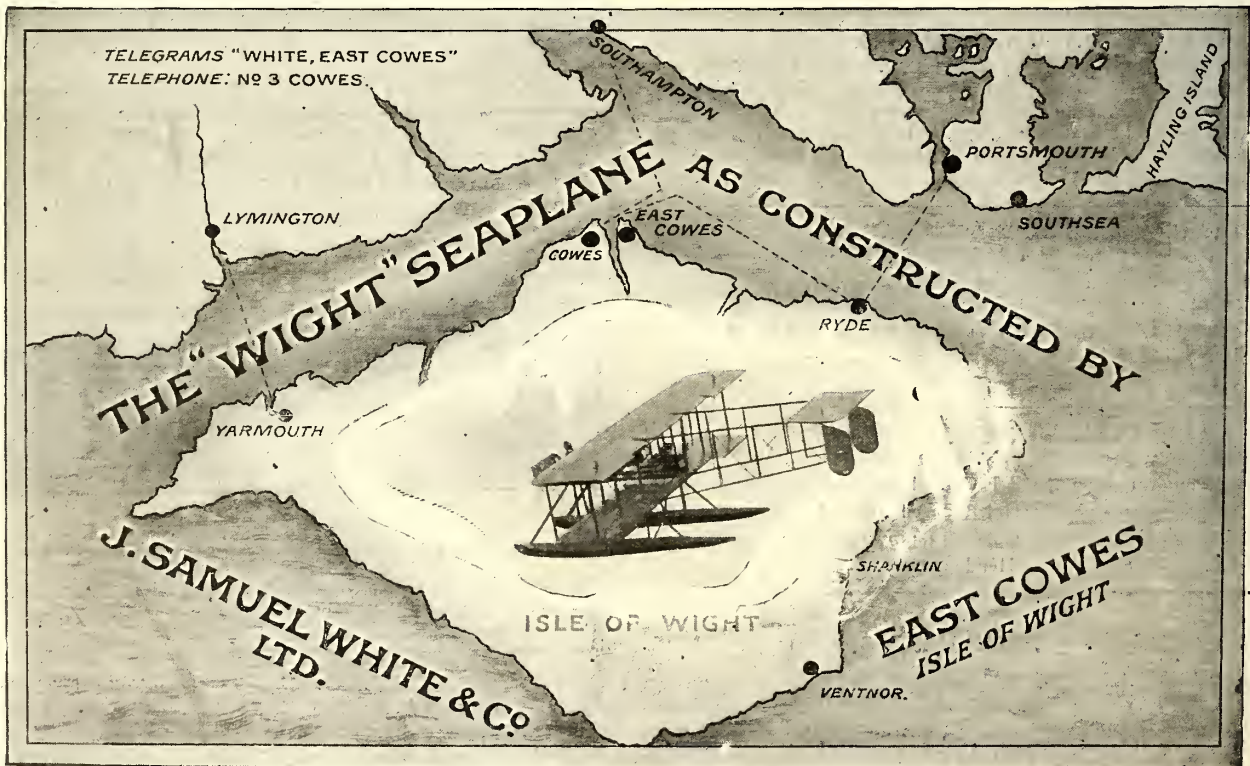
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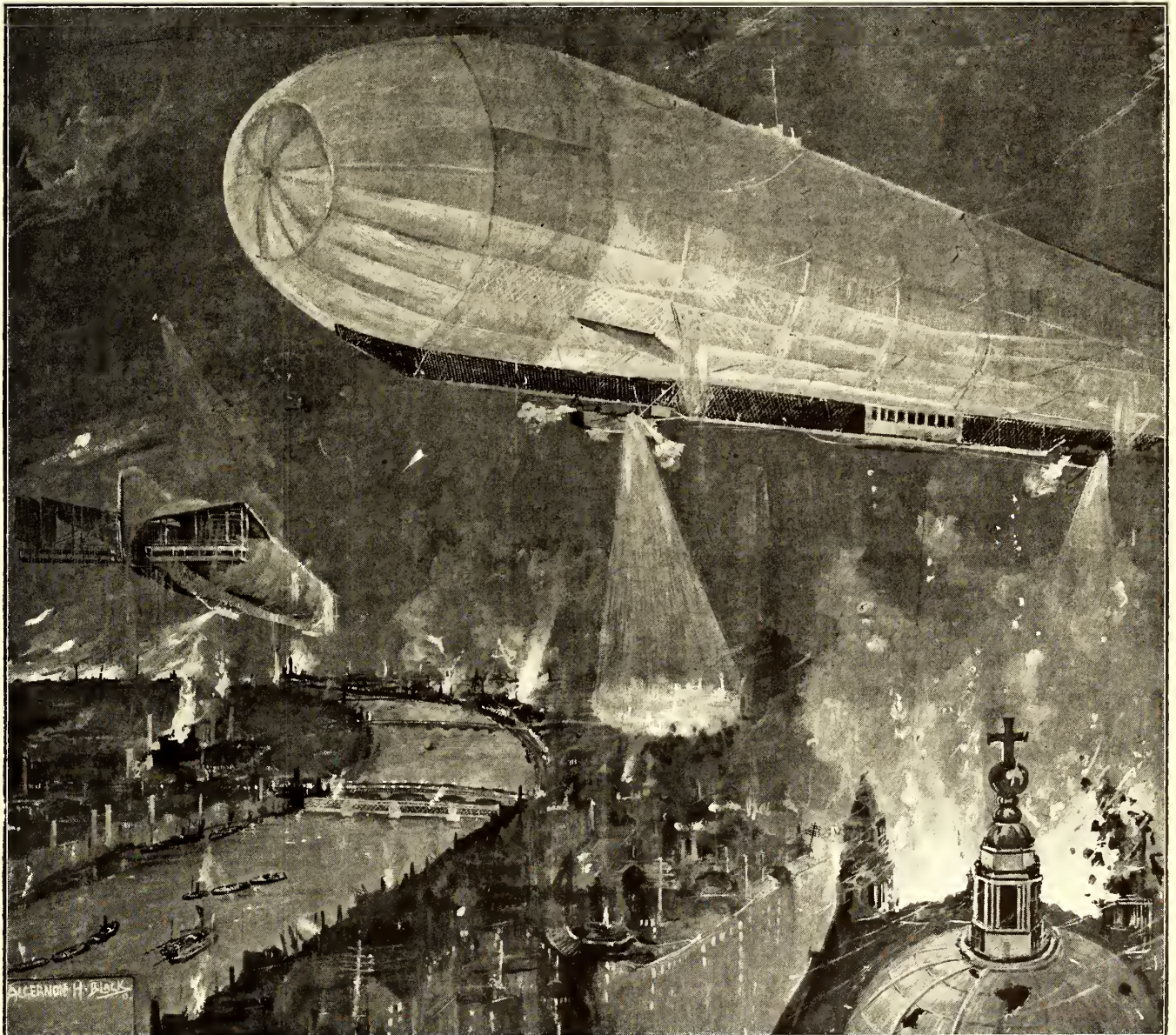
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O. AS A NEWSPAPER.]

WEDNESDAY, SEPTEMBER 2, 1914

No. 10

AN AWAKENING.



Is such an awakening as that shown above necessary before Londoners realise the gravity of the present situation? It may be objected that the Zeppelins are shown as only 500 feet or so over the roofs of the houses. Is there anything in London to hurt them if they do come down low to make sure of their aim? Apparently our artist expects the attacks to be directed on the Hotel Cecil, the Houses of Parliament, Charing Cross Station, and St. Paul's, but one cannot assume that private houses will be successfully missed in obedience to the Hague Convention.

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The Royal Naval Air Service.

Day after day, week after week, with the regularity of clockwork, letters arrive at this office asking for information concerning those sections of the King's armed services which operate in the air. The letters vary all the way from the courteous and dignified epistle of the Army officer asking for the names of any books which deal with military aviation—there are none, as a matter of fact, except Captain Mellor's book and some official publications—down to the letter, generally misspelled, of the earnest youth who, finding that making paper models in his master's office and gliding them onto the chief clerk's head does not satisfy his aeronautical ambitions, writes to ask how he can get a commission in the Royal Flying Corps, because he feels that he is born to be an aviator, and he hears that flying officers are paid much better than the clerks in even quite big offices. Since the outbreak of war the number of letters on this subject has increased alarmingly, and to them are added shoals of new questions concerning the demand of the Royal Naval Air Service for mechanics. It may therefore save a good deal of unnecessary letter-writing if I set down a few remarks which may perhaps help those who are desirous of joining the R.N.A.S. in any capacity.

To begin with, both Services have practically put up the "House Full" sign, and have a waiting list yards in length. This might be taken to mean that it is useless to send in an application at all, especially for the commissioned ranks. For most people it is so, but, just as there is always room at the top in any profession, so there is always room in either Service for men with exceptional qualifications; but first let me deal with the question of R.N.A.S. mechanics, as there has been a demand for them recently.

The pay runs from four shillings to ten shillings per day, plus free kit, and "the run of your teeth," as the Navy's phrase has it; and there is nothing better or more tempting to be found by any first-class fitter, motor mechanic, carpenter, sheet metal worker, or so forth. Also, there is little doubt that if a man does well during the period of his temporary engagement he will be taken on permanently afterwards, for big as the R.N.A.S. has suddenly become under the pressure of preparing for war while war is in progress, it is still a very small thing compared with what it is going to be in a few years after the war is over, and men with brains will have a better chance then, when we can go on developing the huge new seaplanes which we have been compelled to shelve for the time being in the rush for standard type machines which are not experiments.

True, the R.N.A.S. does not offer much attraction to the adventurous youth, who, combining the attributes of Nelson and Nasmyth, or Collingwood and Cayley, wants to be drafted at once into a big ship, there to fight the Germans at sea, and invent strange flying mechanisms when he is not fighting.

R.N.A.S. Mechanics.

Most of the new R.N.A.S. mechanics will find themselves sent to some Coast Defence Station, where they will live in comfortable quarters, somewhat overcrowded perhaps because the personnel has expanded—numerically, not physically—more rapidly than the buildings which house it. There they will probably spend the day in a well lighted and aired workshop, also perhaps somewhat overcrowded, and perhaps for a while rather short of tools, where they will help to save the Empire by cleaning engines, patching punctured floats and doing such uninspiring work. It does not sound heroic, but a badly cleaned engine or a badly patched float may mean the loss of a battleship or the destruction of a Coast Defence Station, so the

work is just as important for the country as is a successful attack on a Zeppelin, an attack which can only be possible if every mechanic does his job thoroughly. After days and days in a workshop men are a trifle apt to forget that even more than the life of a pilot may depend on their work.

The man who is not willing to settle down steadily to such dull routine, and who has visions of fierce dashes through a hurricane of fire to drop a bomb (which would be perfectly futile) on the deck of a German Dreadnought, had better by far go and enlist as a private in K. of K.'s newest Army. He will probably get all the fighting he wants then. Though even then he may be put on bridge-guard, and come home with a batch of other wounded through being hit on the head by a soda-water bottle (beer not being allowed) flung out of a window by one of our own men. The daily papers may rave about our heroic soldiers—good luck to them, for they have upheld the Army's honour as they were expected to do—but for goodness sake let us realise that wars are really won by the men who do the mere donkey-work of seeing that the fighting men are properly armed, properly equipped, and properly fed.

Here and there a civilian mechanic, enlisted for the period of the war only, may have the luck to be sent on sea service, especially later on when our faster ships are using air-scouts to help in finding the scattered remnant of the German Fleet and their remaining fast liners which are operating as commerce-destroyers, but most of his work will be done at home. There is little chance of distinction, but there is an unrivalled opportunity for the first-class mechanic who wants to make a start in the aeroplane business, for after the war is over and he has taken his discharge, he will, on the strength of his experience and with a recommendation from his commanding officer, have little difficulty in getting quite a good job with an aeroplane firm.

As a rule his life is likely to be a happy one, for the men at the various air stations—and I know most of them—are as cheery a lot as one could wish to see. The officers are, as always in the Navy, more closely in touch with their men's lives than is the case in the Army, and the best feeling prevails all round. Discipline is strict, but not galling, and from what I know of civilians of the artisan class—fitters, carpenters, and so on—a little discipline and contact with men of the class of the officers in the King's Navy will be a mighty good thing for them.

Men of a very good class are enlisting in the R.N.A.S. already; a good many of them ought by rights to hold commissioned rank, and would do so if they had passed for their aviators' certificates. They are frequently the best mechanics of all, so no youngster who has had workshop training need hesitate to join, for he is fairly sure to meet men better than himself, socially and as mechanics. Men of good class are wanted, and only the best men will be chosen, for there are already thousands of applications for enlistment, and it is quite useless for men without workshop experience to apply, and even they are only likely to be taken if they can produce special recommendations, though in a month or two probably more will be wanted.

The Commissioned Ranks.

Officially, the commissioned ranks of the Royal Naval Air Service are also full. That is to say, no more pilots are wanted at the moment either for seaplanes or for coast patrols on land machines. There are also a number of young officers who are being trained so that they can take the places of others damaged

on service, or so as to be ready for use when the size of the Service is increased by the opening of new Coast Defence Stations, or by sending machines and pilots abroad or out with the Fleet.

A number of these have been selected on purely personal grounds, and have not yet passed for their R.Ae.C. certificates. This batch is being trained at the Grahame-White School at Hendon, by special arrangement with the Admiralty, much on the lines so often advocated in this paper—that is to say, the officer is officially approved first and is taught to fly afterwards, instead of having to gamble his £75 for tuition on the off chance of being accepted for service afterwards.

After passing their ordinary certificate tests these officers will undergo an extended course of training at Hendon, on machines belonging to the R.N.A.S., such as the 50-h.p. Caudron, now being flown by the more advanced pilots. The whole of this section is under the command of Flight-Lieut. Porte, R.N. (at any rate, he was a Flight-Lieutenant a few days ago, though presumably his previous rank in the Submarine Service and the importance of his command at Hendon will mean his being an acting Squadron-Commander in due course). After finishing at Hendon these officers will go to Calshot for seaplane training, or to Eastchurch for further land training, before joining one of the regular Air Stations.

The Waiting List.

Behind them again is a "Waiting List" yards long, containing hundreds of names, from which further officers may be selected. On paper it looks as if the ardent youth desiring to join the R.N.A.S. will be over the age-limit before he has a chance of being taken in. As a matter of fact, the situation is quite otherwise. Most of the names on that list are absolutely useless. Unfortunately, officers of the King's Navy have to be courteous, and cannot tell an applicant that he is socially or personally unfit to hold a commission, and that he can either enlist on the lower deck or clear out, though I feel pretty sure that more than half the "Waiting List" could be wiped out on that score, for I know some of the men who have applied. One man, not a pilot, who has been messing about unsuccessfully in the aeroplane trade for years, an indifferent workman, a poorish salesman, and an unattractive personality, was quite indignant that he had not been offered a commission immediately he applied, and was still more indignant with me when, on coming to me to bewail official dilatoriness, I tried to make him see straight away what the people at the Admiralty would not tell him, simply that he is not of the officer class. In other cases men who are pilots have hung about expecting commissions to be offered to them, which, if offered, would put them on the same footing as men from whom they gracefully hinted that tips would be acceptable in the days when the present officers were pupils and they were instructors. Yet they cannot see they are not of the officer caste, although men who are their betters, both personally and as fliers, like that little group of Grahame-White pilots, cheerfully go and enlist.

It sounds snobbish, but it is an elemental fact that there is a distinct class of man who is suitable to be a commissioned

officer. Even in America, where their Services are more democratic than anywhere else, the same thing is found. The men must have leaders of a class socially different from themselves. The lower the class of man the more easily he recognises the fact, but it is hard to make the artisan and shop-keeper classes see it.

Man is simply an animal like any other, except that, being more developed mentally, he can be more cleverly brutal. One cannot train a cart-horse to win a Derby, but one may make a useful selling-plater out of an unpromising-looking half-bred. The best horses must always be thorough-breds, though a weedy thorough-bred is the most useless animal alive. Just in the same way a born and bred labourer cannot make a great leader, though a well-educated artisan may make a very valuable warrant officer. The great men must be well bred, besides being merely well educated, though the well-bred waster is the worst kind of scum at the top of the social mixture. As Captain Basil Hood wrote years ago:—

"The world of men and women is a sort of ginger pop.

The dregs are at the bottom and the froth is at the top." And the really sound stuff is in between, in very distinct layers.

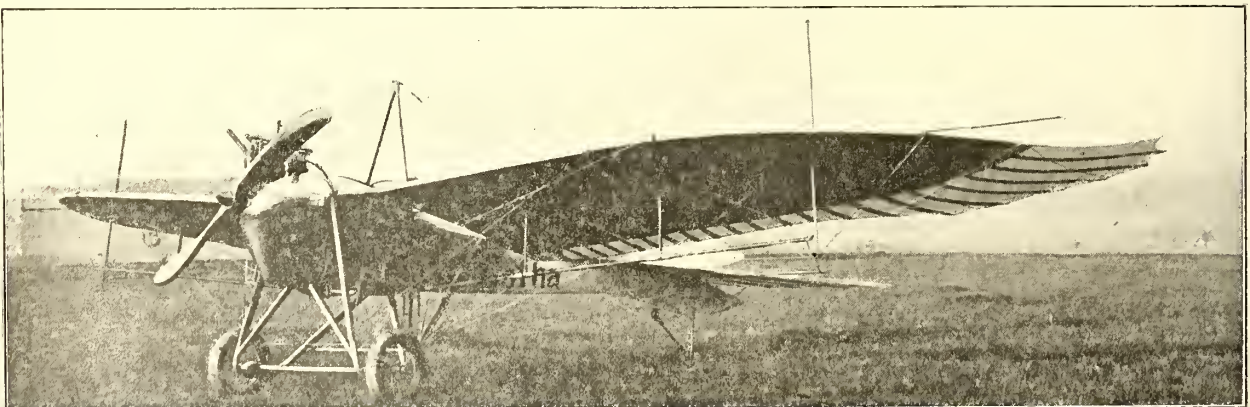
Selection.

As a matter of fact, the selecting officers of the Air Department show remarkably good judgment of men, erring, if anything, on the side of leniency towards minor social defects, and as the result of a course of naval training several middle-class youngsters who were bumptious to the point of being offensive have been turned into really useful officers, and rather shy and awkward youths have developed self-reliance which was not obvious in them at first.

The process of selection depends largely on a verbal examination in nothing in particular, the questions being directed towards getting an insight into the candidate's character through his method of answering. For example, some months ago one charming but somewhat nervous youngster was asked the usual question, "Where were you born?" "In Glasgow, Sir," he replied. Then came the apparently silly question, "Why were you born in Glasgow?"—as if he could help it, poor chap. The candidate was rather dazed for the moment, but, pulling himself together, he said, "I don't know, Sir. We were all born in Glasgow; I suppose it was a habit." He was selected, and I gather he has the makings of a good officer, as well as a fine flier.

Anyhow, the selections, taking them all round, are particularly good, and there is always more room for good men. Only, I want here and now to impress on my readers that the Royal Naval Air Service wants first-class men only. It is not a home of refuge for failures in other professions, or for mere adventurous spirits who are anxious to see active service in the most exciting way possible. Men with heads and hands are wanted, not those with hands only.

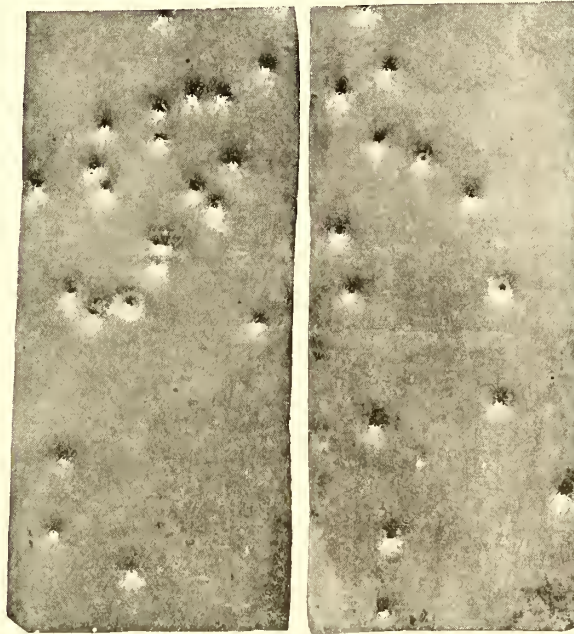
If a man wants to get into the R.N.A.S., and can afford to take his aviator's certificate at a civilian school at his own expense, so much the better, for in doing so he may display unusual promise as a flier, and that will undoubtedly help him



A Typical "Taube."—The Gotha Monoplane. (Another of Mr. Whittaker's smuggled trophies.)

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very considerably towards quick selection for the Service, provided that his other qualities show that he is a suitable person. But it is mere waste of money for him to do so unless he is convinced that he has the right qualities apart from mere ability to fly. It is a difficult question for any man to decide for himself, especially as adventurous youth is not given to introspection and heart-searching self-examination; therefore, if anyone who wants to join the Service happens to have friends who are naval officers—old senior officers for choice—I counsel him to consult them on the subject, and if possible to obtain from them some recommendation to the Admiralty, just to show that he has merited the approval of officers who have already served their country.

Learning at one of the civilian schools at Hendon has also the advantage that the pupil may come in contact with the Naval pupils there, and, through them, with the officers on duty at the aerodrome, so that, if he behaves well and shows that he can fly well, he may earn a recommendation from them, for they are naturally on the look-out for men of the right class.

Apart from Aeroplanes.

A few notes on subjects other than those directly concerning aeroplanes may be of interest at this juncture, as they deal with points not likely to crop up in the general press.

Firstly: How many people realise the extreme probability that the Emperor William II is the victim and not the cause of this war? The "Pall Mall" published recently some extracts from a letter from the late General Sir James Grierson, in one of which he said, "The Emperor is a gentleman, but the people round him are simply poisonous." Curiously enough, an officer, with whom I have the honour to be acquainted, who is of equal rank with General Grierson, and who knows the Emperor as a personal friend, said the same thing to me in almost those identical words exactly a year ago.

This view has been curiously confirmed by a young lady whom I met a few days ago. She had been living in Berlin as companion and governess to the daughters of a wealthy German who was closely connected with the Court. A fortnight before war was declared she was sent home by her German employers, on the ground that their daughters no longer required to learn any more English, and she left them on the best of terms, and with many presents. At the house where she lived the Crown Prince was a frequent visitor. She describes him as being in every way what is generally called a "wrong 'un," and she was particularly disgusted by his behaviour to the daughters of the house, and by his continual sneering references to "the German Emperor," whom he appeared to hold in the deepest contempt.

She also states that the Emperor is very unpopular in Berlin, especially among the ultra-smart extravagant set to which the Crown Prince belongs. Even among the people the Emperor is unpopular, and when he drives through Berlin he never travels at less than 50 miles an hour, for fear of assassination. This point is confirmed by Mr. Whittaker, who described to me the way in which the traffic scatters in all directions when the note of the special horn used only on the Emperor's car is heard.

It must be remembered that the Emperor was always very friendly with his uncle, King Edward VII, and that he resembled in many ways his mother, the Empress Frederic, who was hated by the Prussians, and was always known as "that Englishwoman." Also, it is generally known in Berlin that the Emperor is afflicted by a malignant growth in the mouth and throat, and cannot in any case live very long.

When one hears him denounced as the "Mad Dog of Europe," and so forth, let us consider for a moment whether he is not now merely the puppet of the Crown Prince's set, the people who have run Germany as a nation and themselves as individuals into such debt that it was either a case of plunging the people into war, or the whole nation going bankrupt. A winning war might have meant solvency out of the war indemnities paid by Germany's enemies. Either the *status quo ante* or defeat equally meant going broke. Let us, then, rather pity the Emperor, and determine to revenge ourselves on the right people, the Prussian bureaucracy and the sham plutocracy.

And, be it noted, the "thruster," who joins a school there with the express idea of pushing himself under the notice of the said officers will probably effectively damn his own chances. Under the circumstances, it is well to cultivate "a humble and a contrite heart," and to order oneself lowly and reverently before those set in authority over us.

Finally, let me again impress on my readers that there is room in the Royal Naval Air Service for the right men, but only for the right men, and that it is useless for the man who has been politely "boomed off" by the perhaps unnecessarily courteous officers of the Air Department to hang round waiting for an appointment, or waiting to be told bluntly that he is no use. It takes months for the Admiralty to make up its mind to be so rude as to say, "We don't want you," and when it does say so it never gives a reason. It is far better, if no appointment is forthcoming in two or three weeks, to go and enlist in Lord Kitchener's latest batch of recruits for the Army. There are better men in it than any of us who have to stay at home.—C. G. G.

Secondly: Has it occurred to anyone that a number of the outrages in this country, such as shooting at trains, stabbing sentries, and so forth, may not be the work of German enemies at all, but of disaffected Hindus? Has the murder of Sir Curzon Wylie at the Imperial Institute been forgotten, or the attempt to assassinate Lord Hardinge at Delhi? A friend of mine, staying with some people on the South Coast, met there two Bengali students from Cambridge, who said that though Indian students, as a body, sent in a loyal address on the outbreak of war, a number of them hated England, and hated her worse for her alliance with Russia. They wanted Germany to win, and intended to do all they could to help her to crush Russia, and, incidentally, England. The point is worth watching.

I do not forget the splendid offers of the Indian Princes, or the eagerness of our Indian troops to help us in this war, but there is a vast racial difference between the magnificent Mahometan soldiery, the Hindoo Sikhs who stood by us in the Mutiny, the Pathan hillmen who scrap for us or against us with sporting impartiality, the cheery little Ghurkas of the North, and others, and the filthy, sneaking, leering Bengali Babus one sees prowling round London suburbs, and making love to fools of English girls—one of the most disgusting sights of our city. There is no law which prevents these vermin from owning motor-cycles and carrying fire-arms, but some of them, at any rate, are more dangerous than any alien enemy in our midst.

Thirdly: The Official Press Bureau would do well to deal with this persistent rumour of the arrival of Russian troops in the Western area of War. If the rumour is the truth they should be in action by the time these notes appear, and no harm is done in mentioning it. If it is not, then it is time it was exposed as a lie, for it is likely to hinder recruiting for Lord Kitchener's third army. Every person one meets knows someone who has seen black-bearded men in grey uniforms looking out of trains passing through stations in the dead of night or in the early morning. Fifty, a hundred, three hundred train-loads have passed over certain lines, which were closed to all other traffic for two nights and a day. Transports were ordered to land British troops in France a fortnight ago, and to proceed light to a Russian port. These are the stories current.

They may be explained by the fact that in time of peace we draw vast supplies of corn, meat, and foodstuffs from Russia, and that in order to feed our troops in France we may be shipping food from Russia to Scotland and rushing it down by rail in passenger coaches and horse-boxes to our Southern ports, to avoid the risks of mines in the North Sea. And, then, again, we may not. It will be interesting to hear the real truth. Meantime, the young men who lounge and flirt in punts on the river, and sit watching cricket matches, are not keen on enlisting so long as they think the Russians are going to fight our battles for us. We need a few Zeppelins overhead to wake our people to a proper sense of the situation. It is rather a pity that excellent young sportsman, von

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Hiddessen, did not pay us a visit on Sunday instead of wasting his time over a depopulated Paris. The distance is very little, if any, greater, and he would have run less risk of being brought down by artillery fire. But then, being a product of German culture, perhaps he remembered the severity of our laws against flying over our prohibited areas.

Apropos.—Permit me to compliment the "Times" on its scare article on Sunday. Lord Northcliffe is an Irishman, and probably realises that the best way to galvanise an Englishman into life is to scare him to death. Only it was a pity to do it in the "Times," which is still read by all the best people. The "Weekly Dispatch" and the "Mail" would have gone further in reaching the people who need waking up. However, it had the effect of extracting the longest and most

lucid announcement the Official Sup-press Bureau—as Mr. Thorburn calls it—has yet delivered. And, apparently, none of the other good respectable papers saw that the real move was.

By the way! An old soldier, who fought in South Africa, propounds rather a nice problem in arithmetic. We are told that our Expeditionary Force—their numbers do not matter—held up 300,000 Germans for four days, and it is said officially that our loss is 6,000 men killed and wounded. A fair estimate of killed to wounded is 10 per cent., but double even that, and say we have 1,200 men killed. Then it takes 25 Germans four days to kill one British soldier. Either the Official figures are wrong, which one cannot decently suppose, or the Germans are doing rather worse than we did in South Africa, whenever we had a fair fight.—C. G. G.

The National Relief Fund.

The following letter has been received:—"Dear Sir,—We regret to say that the Subscription Sub-Committee of the National Relief Fund has heard of a good many cases in which use has been made of its name, or of the names of those connected with it, with the object of securing support for appeals which are quite unauthorised.

"We hope you will be so good as to permit the appearance of this letter, the object of which is to inform your readers that they may be assured that any extravagant or grotesque appeals emanate from persons who have neither the authorisation nor the support of this Committee.—Yours faithfully,

(Signed) C. ARTHUR PEARSON.

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Joint Secretaries, Subscription Sub-Committee,

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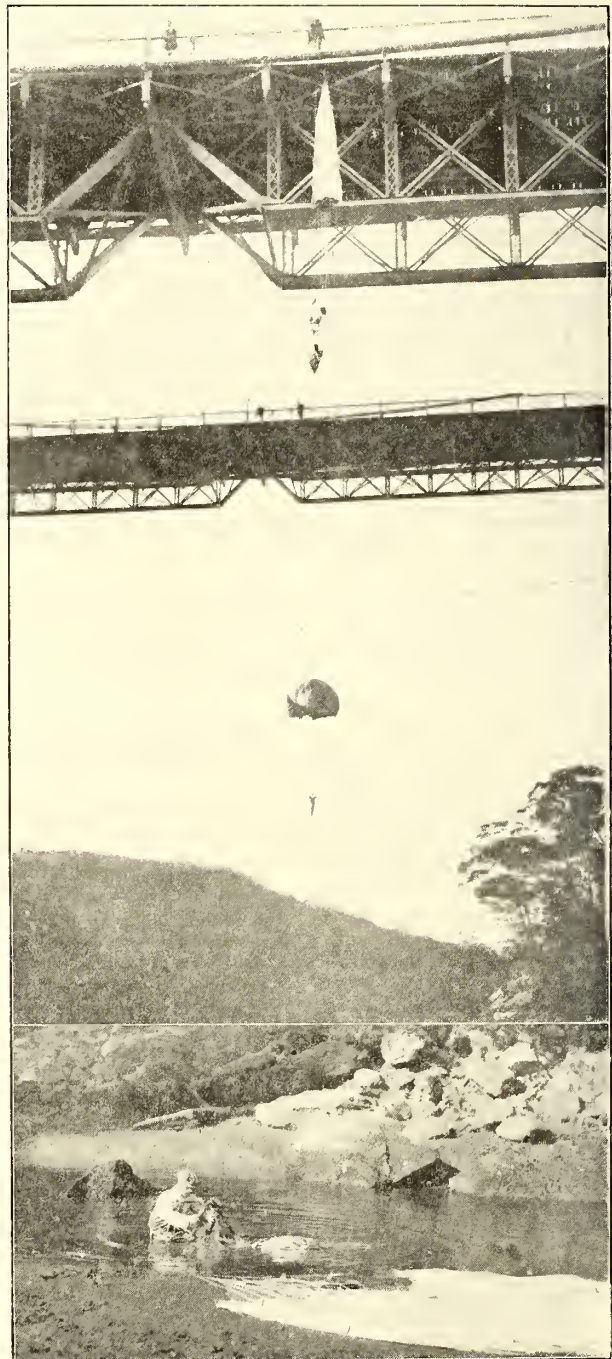
The Salvage Man.

One learns indirectly that the watchman who so pluckily saved the Avro biplane and Blackburn monoplane belonging to Mr. Harold Blackburn when their tent was set on fire at Harrogate was Mr. Guy Wilton, and that he was rather badly burned in salvaging them. He was at that time a premium pupil with Mr. Blackburn. One learns that he has since joined the Royal Flying Corps, and one hopes that the pluck he showed on that occasion will enable him to distinguish himself on service.

Flying in Australia.

From that indefatigable correspondent, "Captain Penfold," to whom many thanks for his interesting news, one learns that M. Guillaux's big flight from Melbourne to Sydney finished on July 18th, and that the actual flying was done in two days with seven stops, the stopping places having been previously arranged so that he could give exhibitions at each. He used his looping Blériot, and the weather was bad and wintry, blowing and raining all the time. M. Guillaux said that he would arrive at Sydney at about 3 p.m. on Saturday, and did so just before time, coming in with the wind behind him and in torrents of rain. There were 10,000 people at Moore Park, Sydney, to receive him.

M. Guillaux left Melbourne at 9.15 on Thursday, and arrived at Sydney at 2.50 p.m. on Saturday. On arriving he was presented to the Governor-General, to whom he delivered a sealed message from the Governor of Victoria. His first stop out of Melbourne was at Seymour (40 minutes), and he had to rise over 10,000 feet over mountains to get there. The next stop was at Wangaratta (70 minutes). From there he had to rise to 15,000 feet across mountains to Albury (45 minutes). From Albury to Wagga took 65 minutes. Thence to Harden 20 minutes, where he stopped the night. On Friday morning he gave an exhibition there, and left at 2 p.m. in heavy rain, and landed at Geelong, 20 miles away, stopping there until the next day, when he left at 7.15 a.m. So bad was the weather that it took him two hours to do the 94 miles to Goulburn. His next landing-place was at Liverpool, and having the wind behind, he travelled 116 miles in 75 minutes. Altogether, he covered about 570 miles in about 8 hours' actual flying, a considerable portion of the journey being over mountains, where landing was practically impossible.



Going! Going! Gone!! Capt. Penfold's Parachute Drop



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Aeroplanes on Service: A Study on the Spot (*continued*)

BY SAMUEL S. PIERCE.

When we arrived at S. Giovanni di Medua, and were still at anchor in the Bay, the harbourmaster informed us that a telephone message from Durazzo had been received to the effect that the Turkish warship "Hamidieh" had bombarded that town and proceeded north. The Greek crew immediately became panicky (how does one spell it?), this being chiefly manifested by the acceleration of their word production. I don't know how many words a thoroughly frightened Greek stoker can get out per minute, but judging roughly by a Gnome motor, which at 1,200 r.p.m. gets out about 4,200 barks, it must have been nearly double that. The captain, mate, and chief engineer appeared and partly pacified the crew by proving to them beyond all doubt that the "Hamidieh" had been reported in the Suez Canal the day before, but on looking seaward it was only too plain that the vessel steaming full speed for the bay was a warship, and the Turkish ensign fluttered out so that it could be recognised by the naked eye, which "cramped the style" of the tale.

In a moment captain, mate, and chief engineer drew revolvers, and with these "persuaders" sent the engine-room force to their posts, and the mate, with the rest of the crew, onto the fore-castle head. Thirty seconds later the last link of the anchor cable had roared out through the hawse-pipe and the engines were rung full speed ahead. In less than a minute more the ship was well under way for the beach.

The engine, a 1,200-h.p. 3-cylinder comp., built in 1880 something, and condemned in 1900 something, was now doing 85 r.p.m., or 15 r.p.m. more than the maximum allowed, and threatened to tear herself out of the ship's bottom at any moment. The safety valves were each guarded by a man armed with a four-foot spanner who discouraged all attempts at their legitimate functions.

At this moment the "Hamidieh" opened fire on the four unfortunate ships, which, having arrived during the night, no longer had steam up, and rode helplessly to their anchors. Through some fluke or other, the fifth or sixth eight-inch shell struck our ammunition ship amidships and set the coal bunkers on fire. In an incredibly short space of time she was on fire from bow to stern, and the racket made by the ammunition cases as the fire reached them was equal to a flourishing young battle in itself.

The "Hamidieh" was firing very fast now with two 8-inch guns and four 6-pounders, and although most of the shells did effective quarry work in the hills, even a Turkish gunner cannot help making a hit now and then when he is firing at the broadside of defenceless tramp steamers at 3,000 yards! Several shells passed over our decks, and one carried away the forward cargo boom, and now I said a prayer over the poor aeroplanes wedged in on deck amidst a hundred carts full of hay and other inflammable matter, to say nothing of 200 cases of picric-acid hand grenades.

At this moment the engines stopped and the ship struck the beach, grounding firmly. Simultaneously the entire crew disappeared shoreward in the only seaworthy boat. I have often watched lifeboat drill on some of the crack Atlantic liners, but it was always a slow and clumsy performance compared with this. I had to remain on board for about an hour more to get the 800 troops off and arrange ladders, etc., as all the Serbian officers had gone ashore in the morning. While I was in the stern a shell struck us there below the water-line, causing the stern to sink and drowning the horses, but fortunately it did not explode. Some flying debris from the ship next to us wrecked all the superstructure amidships and cut me off from the bow, so that I was finally obliged to jump overboard and swim ashore.

Two of the ships at anchor had been sunk, and a third, which was blazing healthily on deck, was slowly sinking. A few men in the bow of this ship managed somehow or other to get a small mountain gun, of the kind carried in sections on mule-back, up out of the smouldering hold, and, putting it together on deck, lashed it securely there, and in a few moments they actually "opened fire" on the "Hamidieh" with this poor miserable little gun,—as well blow beans at a

stone wall with a pea-shooter. However, the third little shell struck the "Hamidieh" and exploded on deck. This so alarmed the Turks that the "Hamidieh" at once put to sea, never to return!

At San Giovanni di Medua, after the bombardment, the machines were lowered into lighters and towed ashore. The Blériots, safely strapped on their "remorques," were soon on their way up the mountain road ("road" by courtesy), but to the biplane problem there was only one answer—they were taken out of the cases and carried by hand bit by bit (with the exception of the motors) the 17 kms. to the "aerodrome."

This "aerodrome" was a swampy valley formed by the joining of two streams. Here the longest and driest stretch was picked out, and some four hundred men employed for the better part of two days filling in with gravel, thus forming a patch about three hundred yards long by fifty wide, which could be used for landing and starting.

In a short time, in spite of many difficulties and bad weather, we got the machines together, and at the disposition of the Staff, Lieut. Stankovitch, notably, on a 70-h.p. Blériot, flew over Scutari many times with a colonel as observer.

Bad luck followed the Farmans here. Sergt. Petrovitch, while making a trial flight with an 80-h.p. Henri Farman, dived too suddenly when starting a spiral descent from 200 metres (he had always refused to strap himself in) and, as we suppose, slipped forward onto his elevator lever. Whatever the cause, his machine capoted, he fell out, and was, of course, instantly killed.

The machine fluttered down upside down very slowly and finally landed in some bushes with very little damage.

Lieut. Stankovitch and his observers were particularly useful in one direction. That was in connection with one large gun used by the defenders of Scutari. There was a fort some distance from the town, and this fort was connected to the town by a railway which ran behind a kind of bank which defended it from the Montenegrins. This one big gun used to be run along the railway, and one could never tell when it was going to start blazing from the fort itself, or from the town, or from anywhere in between, so every morning when the day's work began, Stankovitch used to turn out on the Blériot and locate the gun. Thus the Montenegrins knew what was going to happen, and took steps accordingly. If the gun threatened to open fire on a position they had taken up too close to it, their steps were, in the classic phrase, "damned long ones."

Talking about Montenegrins, I had a good deal of experience with them while studying somehow to get the aeroplanes across into Servia in the early stages of the war, and they are about the most casual fighters one could meet. In peace time apparently the men have nothing to do except walk about with their clothes stuck full of a museum of weapons, for the women do all the field work, but in war they wake up and do things, though in rather unorthodox ways. Their chief weapons against Scutari were three big siege guns which had been presented to King Nicholas of Montenegro some long time back, as a birthday present or something. They were some guns, but, unfortunately, they were of a size which is not now fashionable, being about 5 millimetres smaller than the stock patterns. Consequently, all the ammunition was rather a tight fit. The first time I wandered up to one of their forts and saw them loading one of their guns by the simple process of pushing the shell in as far as it would go and then driving it home with a sledge-hammer, I beat it for the first tall timber.

Shortly after landing the machines at San Giovanni di Medua, I went sick as the result of leaving the troopship by water instead of by boat, and so was invalidated out of the rest of the performance, but I saw enough of it to realise how much good aeroplanes can be on active service, and also how much work has got to be put in by the people in charge of the machines, such as the N.C.O.s and men of your Royal Flying Corps, who do not get quite the same amount of credit as attaches to the pilots who do the actual flying.

Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," August 21st, 1914:—
WAR OFFICE, AUGUST 21st.

SPECIAL RESERVE OF OFFICERS.—ROYAL FLYING CORPS (MILITARY WING).—The undermentioned to be second lieutenants (on probation). Dated August 15th, 1914: William Henry Charlesworth, Archibald Burch Ford, and Edwin Lewes Montague Leveson Gower. The Hon. William Francis Forbes Sempill (Master of Sempill) to be second lieutenant. Dated August 19th, 1914.

From the London Gazette, August 25th, 1914.
WAR OFFICE, AUGUST 25th. REGULAR FORCES.
GENERAL STAFF.

The undermentioned Officers to be appointed General Staff Officers: 1st Grade: Brevet Major (temporary Lieut.-Col.) F. H. Sykes, 15th (the King's) Hussars. 2nd Grade: Major E. B. Ashmore, M.V.O., Royal Artillery. Captain W. G. H. Salmond, Royal Artillery.

ADJUTANT-GENERAL'S AND QUARTERMASTER-GENERAL'S STAFF.
To be a Deputy Assistant Quartermaster-General:—Brevet Major H. R. M. Brooke-Popham, the Oxfordshire and Buckinghamshire Light Infantry.

ROYAL FLYING CORPS.
Commander-Colonel (temporary Brigadier-General) Sir D. Henderson, K.C.B., D.S.O.

ATTACHED TO THE HEADQUARTERS STAFF.
To be a Staff Captain:—Lieutenant B. H. Barrington-Kennett, Grenadier Guards.

SPECIAL RESERVE OF OFFICERS.
ROYAL FLYING CORPS (MILITARY WING).—Denys Corbett-Wilson, to be second lieutenant (on probation). Dated August 19th, 1914. The undermentioned to be second lieutenants (on probation). Dated August 22nd, 1914: William Campbell Adamson, William Bernard Rhodes-Moorhouse, Harry Rowland Fleming, and Hereward de Havilland.

From the "London Gazette," August 28th:—
ADMIRALTY, AUGUST 25th.—ROYAL NAVAL AIR SERVICE:—

Flight Lieut. T. R. Cave-Brown-Cave has been appointed to be Flight Commander to date from July 1st.

WAR OFFICE, AUGUST 28th.—SPECIAL RESERVE OF OFFICERS:—

ROYAL FLYING CORPS (MILITARY WING).—The following Sec. Lieuts. are confirmed in their rank:—A. Payze, F. P. Adams, A. L. Russell, A. A. B. Thomson, L. A. Strange.

From the "London Gazette," August 29th:—
WAR OFFICE, AUGUST 29th.—REGULAR FORCES, ESTABLISHMENTS:—

ROYAL FLYING CORPS (MILITARY WING).—Sergeant-Major Albert Fletcher to be quartermaster, with the honorary rank of lieutenant. Dated August 30th, 1914.

NAVAL.

The Admiralty issue the following notice:—

"The appeal for Motor Mechanics, Carpenters, &c., for the Naval Air Service, published on Friday last, has brought applications from over three thousand volunteers, whose qualifications are being considered as rapidly as possible. About 300 selected as most suitable for examination and tests, in view of enlistment if found satisfactory, will be communicated with in the course of this week. The unsuccessful applicants who do not receive any official letter before Monday next, Sept. 7th, will please understand that, owing to the Crisis, it is impossible to send individual replies to so many, and they are asked to accept the thanks of the Admiralty for their loyal and ready response to volunteer their services, which can doubtless be well employed in some other branch of his Majesty's Forces. Applications for the Naval Air Service as above should now be discontinued."

Photographs published in various papers on Monday, purporting to show the "Royal Flying Corps" on active service, on the previous Saturday, illustrate a strong detachment of the Royal Naval Air Service at Ostend. Among the officers one can recognise Wing-Commander Samson and Squadron-Com-

mander Clark-Hall, the "gunnery Jack" of the R.N.A.S. The machines shown are a Short tractor, a Sopwith tractor, a "pusher," which is either a Henri Farman or a Short, and a Blondeau-Hewlett, B.E. type tractor. There is also Naval Airship No. 3 (Astra Torrcs), Commander Usborne's ship, which is doing such good work in patrolling the Channel while troops are crossing.

* * *

The Admiralty notify the following promotion:—Lieutenant (R.M.L.I.) C. E. H. Rathborne to be Captain and posted to the Chatham Division to date Sept. 1st. [Captain Rathborne is a Flight Commander, R.N.A.S., attached to Felixstowe Air Station.]

* * *

The aerodrome at Hendon is now entirely under Naval control, and arrangements have been made by which gentlemen selected as Probationary Flight Sub-Lieutenants who have not yet taken their certificates are trained at the Grahame-White school. A certain number of land-going machines belonging to the Royal Naval Air Service are also stationed at Hendon for the purpose of giving further instruction to Flight Sub-Lieutenants after having taken their certificates, and before passing them on to the Coast Defence Stations. These machines, and the whole Naval personnel, which includes a number of Royal Marine Artillery Reservists, are under the command of Flight-Lieutenant John Porte, R.N. The Marines stationed at Hendon supply the machine crews for the handling of the Naval aeroplanes, and also the sentries over the sheds. The other civilian schools continue operations as heretofore, and are all very busy.

* * *

At Eastchurch, instruction of newly-joined officers continues vigorously, on Short, M. Farman, Deperdussin, Blériot, and Vickers machines. The departure of a number of land machines and spares, etc., is probably responsible for various photographs of "Royal Flying Corps" machines at Ostend.

* * *

There has been much flying over Southampton Water lately, the Sopwith "Circuit" bat-boat, and a new type Avro "pusher," both flying well. Mr. Gordon England has made further trials with the Hamble River biplane, but without success.

* * *

The marriage arranged between Lieutenant Christopher Edward Maude, Royal Navy, of the Air Department, Admiralty, and Ruth, elder daughter of Dr. and Mrs. Sandwith, of 31, Cavendish Square will take place in September, very quietly, owing to the war.

MILITARY.

From the "Gazette," published above, it appears that General Sir David Henderson is personally commanding the Royal Flying Corps on active service. Colonel Sykes has been appointed a Staff Officer, presumably on the Staff of Field-Marshal Sir John French, with whom one presumes are Major Ashmore, Captain Salmond, and Captain Barrington-Kennett. Colonel Brancker now acts as Director of the Department of Military Aeronautics. Major Brooke-Popham is on the Staff of the Adjutant-General, so presumably Major Becke has taken over command of No. 3 Squadron.

* * *

News of the Royal Flying Corps (Military Wing) on active service is as yet scarce and hard to come by. The writer has had a few of the official postcards, on which the sender may write nothing except his name and the date, and conveys his message by scratching out what he is not. From these one learns that certain officers are quite well and are not in hospital, but that is all. Indirectly, one learns that on leaving England the R.F.C. went to Amiens, where Mr. Copland Perry and his mechanic were killed. Thereafter, it is said that they went to Bruges in Belgium, and, if so, it may account for the report that a British pilot lost his way and was captured by the Germans. It is also known that some, at any rate, of the R.F.C. were at Maubeuge, where they would doubtless see a good deal of the German troops, unless they withdrew before the rest of the Army.

The Official Press Bureau confirms the following casualties:—

DEAD.—No. 47 Corporal F. J. P. Geard, Royal Flying Corps, died August 18th, result of aeroplane accident.

INJURED.—Sec. Lieutenant R. R. Smith-Barry, Royal Flying Corps, Special Reserve, severe injuries to leg.

This announcement was made on August 25th. An unconfirmed report, stating that a pilot named Geard had been killed and his passenger, named Smith-Barry, had been injured, was published in the "Daily Telegraph" about the 19th. The machine was No. 391, a number which is understood to be a B.E. Mr. Smith-Barry is a skilful pilot, but had not flown for some time prior to going on active service. The fact that he had an N.C.O. passenger, and that the accident occurred so shortly after that to Mr. Copland Perry, seems to indicate that this also occurred during a practice flight or during a journey across country, and not while engaged against the enemy.

It has been suggested that N.C.O.s may be employed as bomb-droppers, and that this and Mr. Perry's accident may have been partly caused by overloading with bombs while experimenting with such work. The explanation is possibly correct, but it seems improbable.

* * *

Among the passengers landed at Folkestone by the cross-Channel steamer on Friday was Lieut. R. R. Smith-Barry, R.F.C., who was injured through the fall of his machine last week.

One paper says:—"While reconnoitring he fell from a height of sixty feet, and broke one of his legs. He was first of all taken to Peron, and afterwards sent home." One does not generally reconnoitre at sixty feet, so it seems possible that this was another case of an overloaded machine being stalled by a pilot who had not been flying for some time. No one can blame a pilot under such circumstances, but why should it have been necessary to send out so many pilots who were badly out of practice, and who, to make matters worse, were flying strange machines? The reason is simply that, owing to War Office parsimony, there have never been enough machines available to give the R.F.C. Reserve any practice.

The "Express" states that six or seven British wounded were sent to Folkestone on August 28th by the early boat from Boulogne, and were driven in motor-ambulances to hospital at Shorncliffe. They included one aviator who had had both legs broken by shots fired at him in the air. This seems to refer to Mr. Smith-Barry, who, however, was damaged in an accident to his machine.

The following letter appeared in the "Morning Post" of September 1st:—

"Sir,—Last week in Belgium I saw a wrecked British aeroplane and beside it the grave of the aviator. At the time I was a prisoner with the Germans, and could not stop or ask questions. Later, with the object of establishing the identity of the aviator, I visited the place. Should after the war the family of the officer desire to remove his body, I am writing this that they may know where it is now buried.

"The aeroplane fell close to the road between Enghien and Ath. Belgians near the place told me the officer was shot down by a column of German infantry, the strength of which column he was evidently trying to discover. The aeroplane was totally destroyed, but on a twisted plate I found the words: 'Avro Manufacturing Company, Manchester, England.' There were also in the wreck paper forms for making out reports on reconnaissance. There was no writing on these, but the printed matter was in English.

"At the head of the grave the Germans had put a wooden cross, on which they had written: 'Herr Flier, August 22nd, 1914.' The Belgians had covered the grave with flowers. It should not be difficult to find. It is on the left hand side of the road as one walks south from Enghien to Ath, in a pear orchard, near a very old red-brick house with a square tower. One hundred yards south of the grave is a signpost that reads, pointing south, 'Ath—14 kil.' Pointing north, 'Enghien—5 kil.' Enghien is about thirty kilometres south of Brussels.—Yours, &c.,

"RICHARD HARDING DAVIS,

"Correspondent 'New York Tribune.'

"10, Clarges Street, August 31st."

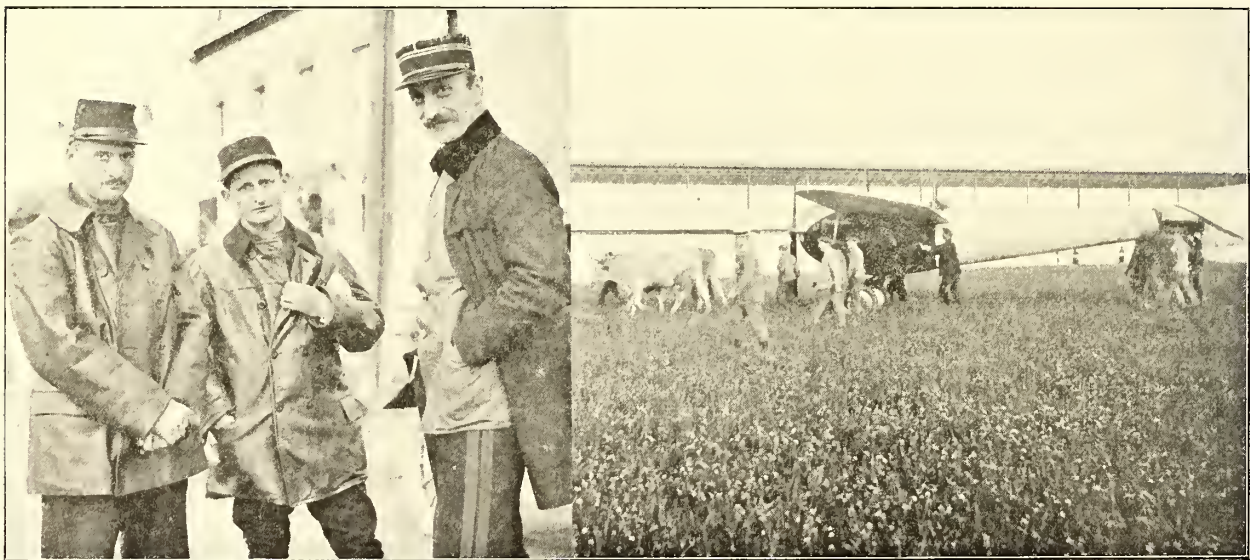
* * *

The "Daily Chronicle" says:—"A very mysterious incident occurred here (Deal) this afternoon (Aug. 30th). A large balloon was sighted coming across the Channel. When some two miles off the shore the balloon collapsed and fell into the sea. The incident was witnessed both from the shore and from boats sailing in the Downs. Several boats went to the rescue, but when they arrived at the spot nothing could be seen of the balloon or any sign of wreckage. It appeared to have sunk immediately. It was a very large balloon."

[Comment is reserved.—Ed.]

* * *

M. Thiebault Sisson, writing from Busigny to "Le Temps," concerning the British troops in France, remarked:—"There are waggons conveying materials for aeroplanes, of which the number is enormous in comparison with the size of the forces."



OUR FRENCH FRIENDS.—On left, M. Garros, M. Pourpe, and a military aviator, Lieut. Dumas, waiting for orders last week. On right, the latest Blériot armored monoplane, being towed home by oxen.

Later, the "Temps" correspondent announced: "Special attention has been given to aeroplanes, of which a large number were brought over. These are all concentrated at a well-equipped station."

Later again, a correspondent at Boulogne, who had interviewed wounded in the first British engagement in France, stated that through lack of air-scouts serving with those troops the exact position of the German troops in the neighbourhood in superior numbers was misjudged.

Taken in conjunction the statements are of interest. Again, the Official Press Bureau might provide enlightenment. Concentration at a well-equipped station either at Amiens or Maubeuge, and not working from divisional headquarters might well result in a lack of air-scouts serving with the troops particularly attacked. The close co-operation between the German aeroplanes and their artillery was remarked continually by our wounded, but not one of our wounded made any comment on our own aircraft, which, so far as reports are concerned, seem practically non-existent.

* * *

The command of Brooklands has been taken over by Lieutenant (temp. Captain) F. V. Holt, Oxford and Bucks Light Infantry, who is forming there a new squadron of the Royal Flying Corps (Military Wing). A certain number of gentlemen selected as flying officers (on probation) who have not yet taken their certificates are being trained there, and will afterwards be further instructed before being appointed to squadrons.

The whole of the Bristol School at Brooklands, with its aeroplanes, spare parts, etc., as well as two of the Vickers School box-kites, were taken over by the Royal Flying Corps as soon as the aerodrome passed under Military control. Since then all the box-kites have been effectively destroyed by pupils, and one assumes that no one will go to the trouble of rebuilding them. The engines might be used advantageously in tractor biplanes of the Caudron type built specially for school work, with plenty of lift and slow speed, a type of machine to which the Caudron design is particularly suitable, though of course, the Caudron firm also build some very fast machines. One hopes we have now seen the last of the lifting tail box-kites so far as this country is concerned, and, of course, they have been obsolete in all other countries for a considerable period. It may be well to point out once more that the Grahame-White box-kites used by the Naval pupils at Hendon have not lifting tails, and the front elevator is merely fitted to act as an indicator for the pupil. The Blériot School at Brooklands continues work as before, with the proviso that its pupils must be suitable for appointment to the R.F.C. when they have passed for their certificates. A pupil trained on a Blériot is really a flier when he passes his tests, and the rapid advancement of all former Blériot pupils in the R.F.C. is noteworthy, Mr. Leveson-Gower, who has been appointed to the R.F.C., continues to instruct at the school and to pass new machines through their reception tests.

* * *

Correspondents at Newcastle state that there has been a record number of spectators on the town moor recently to watch the flying of Military pilots, one of whom was Mr. B. C. Hucks, who were stationed there for patrol work. Three of the pilots were flying Blériots. Thirty thousand people assembled on Sunday the 23rd to watch them at work. One hopes that the public, being brought thus in touch with military aviation, will be the more willing to believe in its necessity in future.

FRANCE.

The "Morning Post" reports that about August 20th a French aviator, who met a division of German cavalry, threw on it projectiles and spread complete disorder in its ranks. Both the aviator and the machine returned in safety. Another machine, after being hit, had to land in Belgium, in a place occupied by German troops. The two aviators succeeded in hiding from 8 p.m. in a wood, and got back to Dinant after nightfall. The pilot of another machine was wounded with a bullet. The observing officer, however, succeeded in bringing back the machine and the pilot. [The last-mentioned incident seems to vindicate the claims frequently made in this paper on behalf of an efficient system of dual control.—Ed.]

One learns from France that there is a striking growth in the French Army's fondness for biplanes of all sorts. Moranes and Deperdussins are considered too difficult to land, and the only other monoplane which retains its popularity is the Blériot, which, owing to its excellent landing chassis is considered the machine of all for landing in rough country.

The accompanying photographs show M. Garros with M. Marc Pource, who flew to Khartoum and back, and a French military aviator, Lieut. Dumas. This photograph was taken about a fortnight after M. Garros was supposed to have been killed.

The other is a photograph of the Blériot armoured monoplane being towed home after an engine stoppage, in the course of which Jules Vadrines landed without damage in a field of wheat. This machine is particularly interesting. The forward section containing the engine, pilot and passenger is built entirely of bullet-proof sheet steel, and the central section is built up of layers of wood and fabric, so that bullets can go right through it without harming it. This section bolts at the front end to the armoured section and at the rear end to the tail section, which forms itself a complete unit. The machine can be taken into its three component parts in a few minutes and packed into a very small space. The passenger sits behind the pilot and is armed with a very effective mitrailieuse.

A correspondent on the Continent writes that the destruction of the Zeppelin shed and three aeroplanes at Metz, reported by most papers as having been effected by Capt. Finck, who, one was left to assume, was a passenger with M. Pégoud, was really carried out by the aforesaid Capt. Finck, who was himself piloting a Breguet biplane. The performance is unconfirmed officially, and apparently two separate paragraphs became mixed in transmission.

The Paris correspondent of the "Morning Post," wiring on the 25th, says:—

"As there has been considerable curiosity to know something as to the value of airships in this war, two letters received by the Aero Club from members at the front are interesting. In one of these Lieut. Perisse speaks of his work under command of Capt. Joux. Two long voyages of reconnaissance are mentioned, in which the two were able to take very accurate observations of the German positions well across the frontier. They were often under fire, and upon one occasion the envelope was struck by seven shrapnel bullets without inconvenience, repairs being easily effected upon return.

"The other letter chiefly contains complaints that more use is not made of that particular unit, which appears to be kept for the moment in reserve with the second line of defence. Speaking of the relative merits of the Zeppelins and the French non-rigid type, M. Sabatier, the well-known airship specialist, who was arrested, together with M. Clement, in Germany shortly before the war on a charge of espionage, says:—"The French airships have been doing excellent work, and have so far escaped unscathed, although often under fire. One of them, starting from Maubeuge, flew over Treves and beyond, returning safely to its shed. On the other hand, we have bagged several Zeppelins. The reason for this apparent invulnerability of the French airships is simple. By reason of the elasticity of our gas-bags we can safely maintain a very high altitude beyond ordinary gun-range. This is impossible with the rigid shell of the Zeppelin, which cannot bear the expansion of gas, more particularly in this hot weather. So the French have a distinct advantage in airships."

[This is certainly a very good point in favour of the non-rigid, but it only holds good so long as there are no aeroplanes in the neighbourhood. From Maubeuge to Treves would take the vessel over the thick of the Ardennes, where, owing to forests and hills, the German aeroplanes would hardly be usable. In open country the tale would hardly be the same.—Ed.]

"General Pau has presented the Cross of the Legion of Honour to Captain Langlois, an aviator, who was wounded in the course of an aeroplane reconnaissance. The presentation was made last Sunday before the 'Quand-Même' statue at Belfort."

In an aeroplane accident at Versailles on August 28th Lieut.

Barbier and his pilot lost their lives. They were starting to join the army at the front in a high wind, and the motor was missing fire. When about 600 ft. up a gust capsized the machine, which fell into a wheat field. Both aviators were killed on the spot.

Soon after midday on August 30th a German aeroplane flew over Paris. From a height of about 7,000 feet bombs were thrown, which fell harmlessly in a small street. The "Times" report says:—"An oriflamme entwined with German colours and attached to a sandbag was also dropped in the same street. In the sandbag was found a letter, written in German, the substance of which is 'The German Army is at the gates of Paris. There is nothing left to you but to surrender.' The letter bore the signature of Lieut. von Heidsen."]

[Doubtless this was Licut. von Hiddessen, one of the best German pilots, who won the Prince Henry Circuit on a D.F.W. last year, and flew remarkably well in several big races this year. Those who know him say that he is an excellent sportsman, and a very likeable young man. War is war, and if one of our pilots performed a like feat over Berlin he would be hailed as a hero. One still wonders how a German aeroplane got through all the French and British machines there must be between the German lines and Paris.—ED.]

From later reports it appears that five bombs were thrown. One fell at the corner of the Rue Albouy and the Rue Vinaigriers before the shops of a baker and wine merchant. All the windows were smashed, and a woman who was passing at the time was wounded, as also was the wife of the concierge. Two bombs burst on the Quai Valmy, and one on the wall of the night refuge behind the St. Martin Hospital. The two other bombs did not explode.

On August 26th it was announced in Paris that M. Gabriel Voisin had been mentioned in despatches for services as an aviator in action. M. Gabriel is not notable as a pilot, and one imagines he would be better employed in turning out the armed and armoured machines he constructs for the French Army. Possibly it was the excellent work of the Voisin machines which won mention.

A German aeroplane flew over Cambrai on August 26th, dropping several bombs, of which only one took effect, damaging the railway bridge. The troops guarding the railway station opened a vigorous fusillade upon the aeroplane, which was hit many times and collapsed into the public gardens. The pilot was badly injured, but his companion was unhurt. Both were officers.

A German biplane flew over Paris about 4.30 on Monday, August 31st, and it is stated that bombs were dropped on the city, but no damage was done.

The "Echo de Paris" says: "Many motor cars carrying aviators passed through Paris on Monday proceeding to the theatre of war. The pilots are determined to make the Germans pay dearly for the insult dropped on the capital by Germans." The "Écho de Paris" also relates that recently a German battery was captured in its entirety by French cavalry after the gunners had been killed by a hail of bombs dropped by aviators.

The Rev. Forbes Phillips, Vicar of Gorleston, writing to the "Express" from Boulogne, describes a new French aerial weapon, which, he says, is more effective than bomb-throwing. The new machines are fitted with boxes which are filled with thousands of arrows, in the form of steel bolts about four inches long, carried in boxes. The contents of the box are distributed on the enemy. The effect upon men in mass or lying in the firing line is expected to be deadly, for it is claimed that one of these arrows dropped from 2,000 feet will go clean through a man. The idea has distinct possibilities.

BELGIUM.

A recent visitor to the office of THE AEROPLANE was Mr. J. Bankes-Price, who will be remembered as flying a Caudron at Hendon. He had just arrived from Antwerp, where he was doing service in the Belgian flying corps, and he returned to England because, owing to the scarcity of machines, the Belgians have at present more pilots than aeroplanes, and all foreigners in their air service have been sent home.

Mr. Bankes-Price was in Antwerp when the Zeppelin made its raid last week, and he says that the most remarkable thing about the whole performance was the calmness with which the Belgians treated the incident. Everybody who had a rifle handy took a shot at the machine, and the forts fired at it as it went away. A few minutes afterwards everybody went back to bed peacefully, except those in the neighbourhood of the damaged houses, and there was no prolonged excitement in the streets. He speaks most highly of the calm, cool way in which the Belgians are behaving, and of the excellent flying of the Belgian pilots. Among the best of them is Lieut. Doné, who flew a Henri Farman at Liège in the early stages of the war, and narrowly escaped being brought down by the combined fire of the German artillery and of the Liège forts. Another notable pilot is the Comte d'Hespel, who flies exceedingly well on a Morane, and is well known as a racing motor-driver. Baron de Caters, who was formerly a well-known motor racer, and took his certificate some years ago on a box-kite, has also volunteered for the Belgian flying corps, but apparently has done no flying.

Mr. Bankes-Price says that when Brussels was evacuated the Germans captured one of the French Maurice Farmans which were sent from Paris a few days before, as noted in this paper. The bombs dropped by the Zeppelin were identified afterwards as being those specially designed for attack on warships, being of an unusually heavy type with thick casing intended to puncture armoured decks, and from this and other evidence it was judged that the Zeppelin which made the attack on Antwerp was one of the naval Zeppelins from Hamburg or Wilhelmshafen, so that it must have crossed over Holland in order to reach Antwerp. Apparently the Dutch are by no means hostile to the Germans, and do not in the least mind having their neutrality thus violated.

Outside Brussels Mr. Bankes-Price saw a German monoplane of the "Taube" type brought down by Belgian artillery. It appeared at about 6,000 ft., but came down lower, and after escaping from much rifle-fire was brought down neatly by the guns. It was apparently hit in one wing, as it turned over and spiralled till it hit the ground.

The Belgian military aeroplanes are nearly all Henri Farmans, built in Antwerp, but there are some privately-owned Blériots, such as that belonging to Olieslagers; the Comte d'Hespel has a Morane, and there are a few 80-h.p. Deperdussin, two of them monocoques, which are quite unsuited to the rough ground of the little aerodrome at Antwerp.

It is officially stated in Antwerp that the Zeppelin attempted another attack on the 25th, but the precautions taken by the forts drove her away. The report that the machine was brought down by gun-fire on the night of the first raid was untrue.

A Belgian officer among the fugitives from Malines states that on August 28th he saw a German aviation officer shot dead while flying. From the manner in which he was buried by the Prussians the Belgian concluded that the aviator must have been a man of distinction.

A message from Rosendaal states that a Dutch peasant coming from Esschen, Belgium, on August 29th, saw seven German military aeroplanes flying over the Antwerp forts, about three miles from the Dutch frontier.

It is reported in the "Morning Post," on the authority of officers arrived in this country, that while scouting on or about August 22nd, on emerging from a cloud, a British pilot found a German aeroplane immediately underneath him. Sweeping down to within revolver shot, he emptied all his chambers, with what effect he could not observe, because the cloud once more enveloped him. Later, when again emerging from the cloud he saw below a small crowd gathered round a smashed aeroplane, and he came to the conclusion that his revolver shots had not been without effect.

It is reported that on the night of August 21st, a French dirigible dropped several bombs upon two German cavalry camps in Belgium. The bombs caused a great commotion. The fires were immediately stamped out, and the dirigible was attacked from below, but without any success. It was able to return to its base without having been hit.

[From this it appears that even the comparatively slow French airships may be very useful for night work, and it should be a warning as to what may be expected from Zeppelins when properly utilised.—Ed.]

On August 21st, when the Germans were occupying Brussels, the inhabitants of the city were, according to a "Times" correspondent, provided with a fresh alarm, which sent scores scurrying for shelter. As it turned out, it was nothing more than another example of Germanic humour. An aeroplane, one of the well-known Taube type, was observed flying above the central parts of Brussels, and while the people were following its evolutions there came a series of flashes. Immediately there was a scamper and cries of "bomb," but it was simply the airman's way of celebrating the bloodless victory by the help of "feux de joie."

One of our wounded from Mons, telling his story on Thursday last to a "Daily Mail" correspondent, said:—

"The German artillery made remarkably precise shooting. Their Zeppelins and aeroplanes came over us all the time, giving their gunners the range so that the shells were bursting within two or three feet of where we were in the trenches."

[If this story is accurately reported, and has not been embroidered by the reporter, one wonders what the R.F.C. was doing to allow Zeppelins to exist. It is curious that though we have heard of French, Belgian, and German aircraft, we have as yet had no word of our own, except in connection with accidents. One cannot doubt that they are doing good work, but one would like to hear something of them.—Ed.]

As to German methods of controlling gun-fire, the following note by a "Daily News" correspondent is illuminating:— "They sent up an aeroplane to fly over the British positions to direct the fire, and it seemed to me to be signalling by lengthening and shortening a disc let down from the machine."

Mr. Alfred Stead writing in the "Express" says:—

"What Belgium needs to-day is a motor-cycle De Wet with aeroplane scouts.

"Belgian aeroplanes fly over Brussels—the other day the population assisted at a thirty-minute combat in the air between two aeroplanes. Rising and swooping with occasional shots, the two aviators sought to destroy each other, to rise above or to ram, but without any decisive result."

GERMANY.

A message received in Rome on August 27th from Berlin stated that Count Zeppelin left that day to join the Army.

Count Zeppelin is generally credited with having fired the first shot in the war of 1870. He is, despite his 70 years, one of Germany's finest airship pilots. It is understood that he is to command one of his own airships, and, despite one's wish to see all Zeppelins destroyed, one hopes that the "Grand Old Man" of aeronautics may emerge unhurt from this war.

The "Evening News" of August 31st reports that Herr Helmuth Hirth, the well-known Albatros pilot, has been shot as a spy in Berlin. The fact that Herr Hirth was a personal friend of M. Garros and had corresponded with him during the war was the chief ground on which the Germans saw fit to deprive themselves of one of their best pilots. Herr Hirth will be remembered for his magnificent flying in the Monaco Rallye and for his fine performances at Hendon before engine failure compelled him to be a non-starter in the London-Paris race. One hopes that the story is not true, for Herr Hirth is a very charming and popular personality. Apparently it is based on the rumour given by our Danish correspondent a fortnight ago, that the manager and chief pilot of the Albatros Co. had both been shot. It was then shown that the rumour was based on the sale of Albatrosses to foreign countries. We have one here now.

A German wireless message dispatched on August 28th mentioned that the Schütte-Lanz airship was vigorously assailed by the Allies near Krasnik, without suffering damage, but that during a thirteen-hour cruise over Lublin she was repeatedly fired at and the rear gas chambers were pierced 25 times. Somehow or other these rents were repaired in mid-air.

The special correspondent of the "Times" at Copenhagen

reports that on August 30th the well-known German pilot, Post (?), was killed, together with a passenger, when he started from Johannistal to join the Army. It is reported that they were shot by German soldiers, who believed them to be foreign spies.

[This is probably Herr Rost—a very fine pilot.—Ed.]

RUSSIA.

Telegrams to Rome on Friday from St. Petersburg stated that a great battle was taking place on the Sereth, near Lemberg, and that Russian aeroplanes are flying over Lemberg.

A Zeppelin bombarded the railway at Mlava (just over the border of Russian Poland). It was pursued and shot at, and was brought down about five miles from the railway station. There were eight soldiers in the car with two quick-firers and explosives

[This may have been the Schütte-Lanz mentioned above, the crew being rather small for a Zeppelin.—Ed.]

To the south of Groubeschov the Russians are reported to have brought down an Austrian aeroplane on August 23rd, killing two officers and wounding a third. [Again we find this report of the use of three-seaters by Austria and Germany against Russia. It is peculiar that it is chiefly in the Eastern theatre of war that multi-place aeroplanes are reported.]

It is reported that an Austrian General Staff officer, Rossman, was killed on August 30th on the Austrian frontier, together with a military passenger whom he had with him in his aeroplane. The machine capsized when flying at a height of 800 metres. The pilot had during the war made many successful flights, and the Austrian "Army Gazette" announced that day that he had been decorated with a high Austrian Order.

A German aeroplane was shot down near Kameryk. Two German officers who occupied it had dropped bombs on a railway bridge which was damaged. The officers were made prisoners.

FROM DENMARK.

THE AEROPLANE'S Danish correspondent writes as follows:—

In an Austrian newspaper, which has arrived here, I find the following description by an Austrian, who was captured by the Belgians, of a Zeppelin airship partaking in the fight for Liège: It was an awful night and all were sure that next day would bring death. Through a thick fog the morning broke. Just when the sun rose, we saw an airship come out of the clouds and steer straight towards Liège. All the inhabitants in the city wept and cried, "A Zeppelin! A Zeppelin! Help! Help!" With feverish anxiety the movements of the airship were followed, and suddenly we saw behind the gondola of the airship in 600 metres' height a light smoke. It was a bomb, which had exploded too early. Then the airship dived to 300 metres and dropped quick after each other two bombs, which exploded in the city under a deafening alarm. From the city and the fort a strong cannonade against the airship on the roofs, and in the streets people shot at it with guns, but without results. From the airship, which kept circling over the city for a long time, were dropped yet ten bombs, and the result was awful. Hardly had the airship left the city when a German detachment of foot soldiers stormed the city in a hurry, much to the delight of the Germans kept prisoners there, while the inhabitants locked themselves up in their houses.

The Austrian-Hungarian Legation in Copenhagen announces the following wire, dated Vienna, August 23rd, which it has received from the Austrian Minister of Foreign Affairs. The wire contains among others: The Austrian aviators now extend their flights to the heart of Russian Poland, and by dropping bombs on the trains and the important buildings cause much demolition and disorder.

Berlin wired at 6 p.m. Tuesday afternoon, the 25th, to Copenhagen: "It is announced from Lorraine that a fight has been delivered between a French airship and a German aviator. Although he was much shot at from the airship the aviator succeeded in getting so near to the airship that he by some well-directed shots brought it to fall, and the rest was made by the German troops."—H.

Materials of Construction: Some Tests on Timber.

(CONTINUED.) BY A. C. BURGOINE.

Despite careful selection of the stuff used for making test pieces, fractures or excessive deflection would occasionally take place by reason of a curly place in the grain, so that the averaged results come out a good deal lower than the figures got from the best tests of all. But, as the wood was all chosen at least as carefully as it would ever be chosen in even the most particular of works, it is necessary that the lower figures stand; some might say that the *lowest* figures should be those to work upon—and with some reason for their contention. However, a factor of safety is intended to provide for just such troubles as this, and any falling off from average values may be taken care of by the factor of safety—provided, of course, the stuff be good to look upon, and properly handled and fitted. Curly grain may be advantageous in some places; screws hold vastly better, and such stuff is less likely to split at the ends, but it is not stiff for beams or struts.

Mere tabulated figures of tests do not convey information so readily as the same figures worked into the form of graphs, so the results of the tests referred to have been plotted in curves as well as tabulated. The fibre stresses have been calculated for each piece at various loads and plotted against a measure of the deflection at those loads.

As the strength of a rectangular beam varies inversely as its length or span, and as the square of its depth, the deflections may conveniently be set off as percentages of the span divided by the square of the depth.

In Fig. 2, curves for seven materials are shown, the letters referring to woods as below, and the figures in parentheses being the average weight per cubic foot of the stuff.

- A. English ash, seasoned about a year, very good stuff (44).
- B. Moulmein teak, very dry, mild quality (38).
- C. Pitch-pine, cut from dry plank, not particularly full of "turps" (38).
- D. Mahogany, mild wood from Honduras, very well seasoned (33).
- E. Canadian rock elm, very good stock, from board which had been cut about six months (38).
- F. English oak, average of several lots, all first-class stuff and seasoned at least two years in plank (46).
- G. Silver spruce, from specially selected planks, bone-dry (31).

What the Curves Show.

Comparison of the curves is interesting, the most striking points being the very high place taken by ash and the low one occupied by oak. In each curve the yield-point is marked by a small circle, that for ash being much higher than any other—almost as high as the breaking-point for the next strongest wood, teak. The comparative stiffness of ash under high stress renders it particularly suitable for the longitudinals of girders, so it is not surprising to find that a lot is used in fuselage building. Up to about 9,000 lbs. per square inch stress, the deflection varies practically directly with the load, that being much beyond the point to which normal conditions and circumstances should allow the stress to go. Thence to the yield-point the deflection increases a little more rapidly than the load, and after the yield-point is passed it about doubles before breakage occurs.

The next stiffest wood appears to be pitch-pine, but this is far below ash, and when weight is taken into consideration, it is hardly so good as silver spruce and perhaps mahogany. Pitch-pine, however, is greatly superior to silver spruce in hardness, and is therefore to be preferred in situations where many fastenings are to be used: in float-building, where a number of roved copper nails are used, pitch-pine will be found to stand the local crushing of the riveting very much better than spruce. It is very durable and somewhat tougher than spruce, and despite its greater weight, might very well displace spruce in many parts; its spring varies with the load fairly constantly over a wide range, and the yield-point is not so sharply marked as with some other woods.

The curve B, for teak, is not likely to interest aeroplane builders very greatly, but is noteworthy as showing the nearest approach to fairness throughout, the rate of deflection being a fairly steady one, but not directly as the load like ash. Teak

is a very valuable wood where strength and durability are required together, and it is possible that teak will be useful later on when we come to build big seaplanes that will have to remain afloat at moorings instead of being housed.

LB. SQ. IN. STRESS

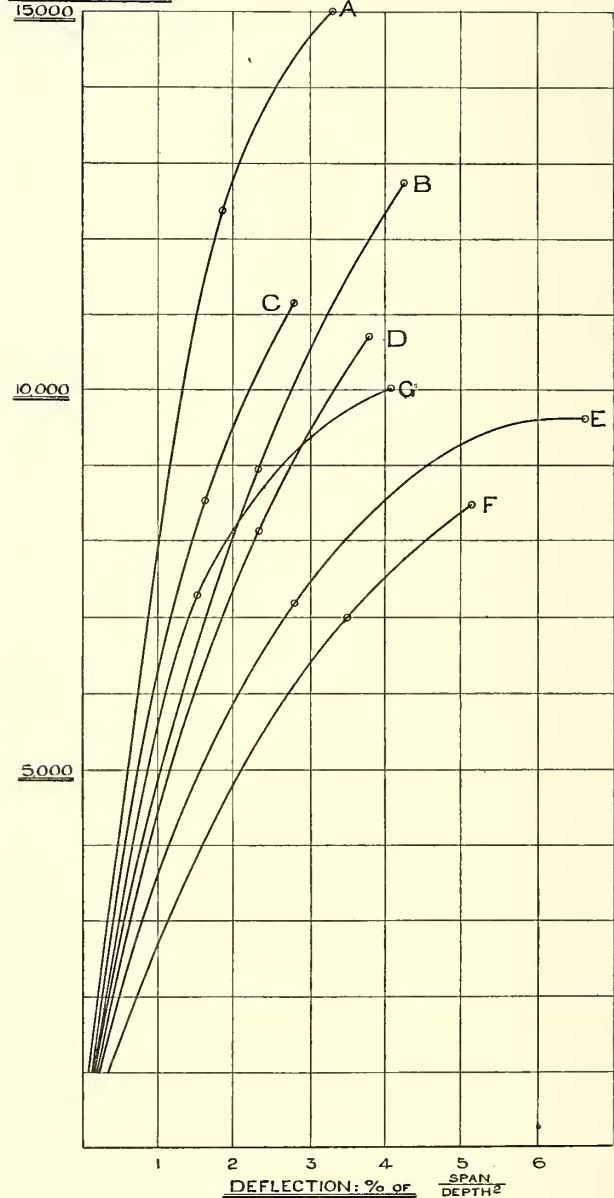


Fig. 2.

Mahogany, curve D, varies greatly in its qualities and behaviour, some specimens being akin to cedar and others more like tough, wiry wych elm than the mild woods we want for floats and other parts. The light and mild varieties are less tough and strong than the heavier samples, so that it matters little which sort be used if a given weight of material be worked in; the lighter varieties will then have greater sectional area to make up for their lower strength. Nice, mild, straight-grained mahogany is not very heavy, and might conceivably be put to more extended use than at present; it soaks up less water than soft woods when immersed, and after some time afloat will be lighter than cedar or spruce, so that it is excellent for float bottoms.

Rock elm is not much used in planes, but is excellent stuff and not so fearfully heavy when well dried out, being at the same time extremely tough and resistant to splitting. It can be bent to all manner of shapes by steaming or otherwise, but is a little liable to cast out of shape if unsupported afterwards. For timbers in floats and flying-boat hulls it cannot be beaten, and it is useful for ribs of surfaces. It bends rather easily when loaded, and the yield-point is comparatively low; even when thoroughly crippled it does not tear right asunder without great wrenching and wholesale destruction of the part, and small pieces will bend double several times without actually pulling apart. The curve E is seen to run out towards its end without any addition to the load after a certain point is reached, showing that the stuff will bend a long way before it really breaks.

Oak, the Overrated.

English oak, that wonderful wood that has done such fine service to our land in the old days of the "wooden walls" and sail power, is usually looked upon as the embodiment of all that is strong and dependable. It grieves one to have to shatter such an illusion, but a glance at the curve F, for average good English oak, will show how fallacious is the idea that this is a grand material. Oak bends easily and does not carry much weight, and if the weight of the material itself be taken into consideration it shows up very badly indeed with practically every wood in general use. Where oak scores is in its closeness and consequent power of holding fastenings of all kinds; its curly nature—even the straightest specimens have

a certain amount of curliness—and its durability together making up for its deficiencies in absolute strength and stiffness. Oak is generally used for deck beams in yachts and other craft; good yellow deal would generally be as stiff, and pitch-pine even stiffer, but neither would hold the deck fastenings so rightly or be so durable in withstanding the ravages of decay. For light racing craft, though, where durability is unimportant and screws may be used instead of the cheaper and usual nails, spruce beams are to be preferred; and under the somewhat similar conditions of service in seaplanes it is not likely that very much oak will be used, except for stems and knees, for which it is particularly valuable by reason of the possibility of obtaining it in such a variety of natural crooks. Even in the form of crooks there are other woods that may be preferred to oak where weight is a consideration, notably acacia, ash, sweet chestnut and larch; but oak crooks are most easily obtained in most districts, and so hold the field.

The curve marked G is specially interesting, because silver spruce is so largely used in aeroplane work, as well as for jobs to which it is quite unsuited. Up to the yield-point the deflection is pretty regular and not at all great; but when the wood begins to yield, all is over with it, and the curve droops quite quickly with further loading. Silver spruce is a very poor wood to use for steamed or sharply curved work, for under the action of the steam the fibres soften to such an extent that the face inside a curve almost invariably crushes as the stuff is bent; it is very bad to hold fastenings, but good for glue, and is extremely poor when exposed to wet.

(To be continued.)

To Increase Safety.

It is interesting to find that at last quick-release gears which allow a pilot to start up his motor unaided and release the machine by simply pulling a wire are being used to a much greater extent than hitherto on naval and military machines. One notices that the type used on practically all machines is that made and patented by Messrs. Rubery, Owen and Co., of Darlaston. It has long been a mystery to the writer why pilots still stick to the old clumsy method of getting local peasants to hang on to the tails of their machines when starting after a landing out in the country, for the custom is distinctly liable to lead to damage to rudder and elevator controls.

Another of Messrs. Rubery-Owen's specialities which is being largely used, and might be used to a still greater extent, is Fox's patent wire-bending pliers. Heavy gauge, solid-drawn wire bracing has largely been replaced by spliced cables, and no doubt a number of workmen find that the lighter gauge wires used for fuselage bracing may be bent handily with ordinary round-nose pliers. It may be well, therefore, to point out that Fox's patent wire-benders not only make a more correct loop, but, owing to their being properly built for the job, are much less liable to damage the wire itself, because they make the whole bend in one operation, whereas when ordinary pliers are used a workman may make an incorrect bend the first time, and then partially straighten the wire and rebend it, which is bound to affect the strength of the wire to a dangerous extent.

The Monosoupape Gnome.

A correspondent writes concerning the sectional drawing of the monosoupape Gnome engine published recently, wishing for further enlightenment on one or two points. Other new readers may be in the same state of doubt, so it may be well to explain again the operation of the engine which was described some time ago. Pure petrol is injected into the crank-case through the rear end of the crankshaft, and a certain amount of air is mixed with it through the hollow propeller-shaft. The valve-cams are so designed that the single valve opens early on the explosion stroke and thus releases the pressure before the ports into the crank-case are opened. This early opening accounts for the peculiarly sharp bark of this engine. The heat of what is left of the exploded gas is not sufficient to fire the very rich mixture in the crank-case.

The valve is held open throughout the exhaust stroke, and during a portion of the suction stroke, so that cold air is drawn

back through the valve. The valve then closes, and the partial vacuum formed in the cylinder before the crank-case ports are removed then sucks in some of the rich mixture from the crank-case as soon as the ports open. This mixes with the air drawn in through the valve, and is compressed and fired in the ordinary way.

The double grooved pulley operating the spindle passing from the rear end of the engine to the front is intended to act as a throttle by varying the position of the cams, so causing the valve to open or close earlier or later, as may be required; but in practice this throttle is not used to any great extent.

The engine is wonderfully powerful for its weight, but needs an intimate friendship with it, rather than an acquaintance, to get the best results. Running on a test stand with the air round it more or less constant in direction, it may be throttled down to any desired extent; but in an aeroplane, where the air-pressure on the open end of the propeller-shaft and the airflow inside the engine cowl round the valves is constantly varying, difficulties are experienced. It is also necessary to be careful about the design and fitting of the cowl, because in certain shapes the exhaust gases are carried round by the revolution of the engine, and one cylinder sucks in the exhaust gas from the cylinder firing next in front of it, instead of getting clean air. However, when all these points have been properly arranged, the engine is one of the most efficient in existence, and certainly the lightest for its power.

The monosoupape engines are built in the usual Gnome fashion with cylinders machined from steel billets, and finished in the most beautiful manner.

Aeroplane Tents.

The Messrs. Volk write to express their satisfaction with the manner in which Messrs. Parsons and Son, of Brighton, constructed their tent hangar for seaplanes. The work was done at very short notice, and was completed in a little over a week. One gathers that Messrs. Parsons and Son are prepared to turn out similar or improved tent hangars in quick time and at a very reasonable price. The battering the tent has stood from the most severe weather on the unprotected front at Brighton, though only anchored in loose shingle, speaks highly for its construction and material, and the design, for which Mr. Hermann Volk is responsible, is one of the simplest and neatest in existence. It should prove particularly valuable for semi-permanent Air Stations, either Naval or Military.

A New Danger.

Simon Vanic, an Austrian who was sentenced to three months' imprisonment at Old Street on Friday last for failing to register, had two postcards from officers of the Zepelin air-fleet in his possession. One hopes that a similar fate does not await the editor of this paper, as there are various and sundry German postcards of aircraft in his office.

Special Steels.

Among the most popular materials in the past for motor and aeroplane work, especially for aero engines, have been certain brands of special steel only obtainable abroad. One particular brand was produced in Germany, treated in Belgium, and sold in France by an Englishman, so that it seems probable that there may be some difficulty in obtaining supplies in future. Firms who have been using this material will do well to note that comparatively recently British firms of steel makers have produced qualities of steel which possess all the features of the most exceptional foreign steels. Notably, the firm of Thomas Firth and Sons, Ltd., of Sheffield, who besides being the first firm in this country to make special grades of steel for aircraft work, have now produced others which the most severe tests show to equal on all points and exceed in many the best foreign material for engine work.

Particular attention is directed to this firm's new bullet-proof steel sheeting, approximately 1/10th of an inch in thickness, which has been proved impenetrable to Service rifle bullets at 500 yards, the bullets merely making an indentation in the metal, thus showing that at a vertical height of, say, 4,000 feet, they would scarcely even mark it.

Self-Insurance.

All those who are going on service, whether as aviators at the front, or merely on home defence duty, should make a point of always carrying a "Tabloid" first-aid outfit. The smaller sizes go handily in the pocket, and the larger sizes, which can be carried easily in a car or in an aeroplane, have been aptly described as "only lacking a tabloid doctor to be a complete tabloid hospital." Quite apart from serious wounds, even small abrasions and cuts such as one may receive when handling cars or aeroplanes in a hurry, should be properly treated with disinfectants to avert the danger of blood poisoning, and, therefore, it is well worth while to carry one of these "Tabloid" outfits constantly.

Weather Report.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Fair	Fair	Fair	Windy	Calm	Fair	Fair
Shoreham ...	Calm	Puffy	Calm	Calm	Calm	Bumpy	Bumpy
Sheerness ...	Fair	Windy	Windy	Windy	Fair	Fair	Good
Southampton	Fine	Fine	Wet	Fine	Fine	Fine	Fine
	Fine	Fine	Rain	Fine	Fine	Fine	Fine

School Reports.

Hendon.—AT GRAHAME-WHITE SCHOOL: Instructors: Messrs. Manton, Merriam, Lowe, Russell, Shepherd and Winter. Pupils with instructor: Messrs. Allen, Carabajal, Crowe, Easter, Giles, Haines, Hawkins, Lister, Morgan, Mumby, Perry, Polehampton, Riggall, Rosher, Stalker, Strickland, Strong, Vere, and Whitehead. Straights alone: Messrs. Crowe, Whitehead and Wiles. Circs. with instr.: Mr. Wiles. 8's or circs. alone: Capt. R. Upton. Certificate taken by Capt. R. Upton (Aug. 26th). Machines: G.-W. biplanes.

AT THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. R. Desoutter and R. M. Murray. Pupils with instr.: Messrs. Legh and Verriam. Machine: Caudron two-seater biplane (60-h.p. Anzani).

AT BEATTY SCHOOL.—Instructor: Mr. G. W. Beatty. Pupils with instr.: Messrs. Cheung (54 mins.), Russy (35), Rochekelly (70), Smith (33), Leong (25), Hodgson (12), Whittaker (10), Virgilio (30), Lord (52), Hornby (35), Gardner (29), Aoyang (30), Carter (41), Lt. Remington (20). Certificate taken by Mr. Russy. Machines in use: Dual control biplanes.

Shoreham.—AT PASHLEY BROS. AND HALE.—Instructors: Messrs. E. and C. Pashley and Hale. Pupils with instr.: C. Winchester, Mrs. Vincent. Strts alone: Mrs. Vincent. 8's or circs alone: C. Winchester, J. Woodhouse, E. Roberts, C. Rutler. Certificate taken by E. Roberts (on Sunday: good glides and landings). Machines: Pashley and Farman biplanes

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WEDNESDAY, SEPTEMBER 9, 1914

No. 11

R. N. A. S.



Squadron-Commander Porte, R.N.—Commanding at Hendon—with some of the officers under his command: (1) Sub-Lieut. F. W. Strong; (2) Sub-Lieut. R. Hope Vere; (3) Flight Lieut. E. B. Bauman; (4) Sub-Lieut. E. V. Perry; (5) Sub-Lieut. Riggall; (6) Sub-Lieut. Allen; (8) Sub-Lieut. H. Rosher; (9) Sub-Lieut. G. E. Giles; (10) Sub-Lieut. Haines; (11) Sub-Lieut. Whitehead. (Officially the various Sub-Lieutenants are Flight Sub-Lieutenants, at present on probation.)

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Notes on the Royal Flying Corps.

It may have been noticed by those who read the papers that the daily Press is at last kicking against the behaviour of the Official Sup-press Bureau, which insists on treating the people of this country as if they were little children. Mr. F. E. Smith's personal hand in the matter was exposed pitilessly in the "Times" and its relatives the "Daily Mail" and "Evening News" last week, so we know who is largely personally as well as wholly officially responsible for the mismanagement. Mr. Smith's essay into military affairs as *aide* to Sir Edward Carson in stirring up the Ulster Volunteer movement showed his desire to pose as an amateur Bismarck, and his appointment to the Press Bureau, which could only have been obtained through his friendship with Mr. Churchill, doubtless satisfied his wish to have a finger in the Army's pie, until such time as he can blossom forth as a Conservative War Minister—and then Heaven help the Party. Mr. Smith has always appeared to me as a Conservative version of Colonel Seely plus Mr. Lloyd George's gift of invective, but minus Mr. George's statesmanship, and his handling of the Press Bureau seems to be about on a par with Colonel Seely's handling of the Royal Flying Corps. The chief grievance we who are concerned with aeronautics have against the Press Bureau is that we have been told absolutely nothing about the doings of the Royal Flying Corps, or of the Royal Naval Air Service.

We hear a lot from our own wounded about the highly effective work done by the German aeroplanes. The Press rings with the exploits of the German Zeppelins, which have more than justified their existence over land and sea, and have done far better (from a purely military point of view) than their most ardent admirers had any right to expect. The French Press entertains us with capital stories of the exploits of French aviators, their gallant attacks on German raiders, their long flights through fogs and over country on which it is impossible to land, their witty remarks and their gaiety under adverse circumstances, and yet the French papers avoid giving away any information of strategic value.

What have we heard so far about the Royal Flying Corps? Photographs of a detachment of the Royal Naval Air Service at Ostend have been published in many papers as "The first photographs of the Royal Flying Corps on active service,"—which they were not. An American war correspondent stumbled by accident on the grave of a British aviator whose Avro was shot down by German infantry in Belgium. The name of the victim remains unknown. An officer and mechanic were killed "in an accident in France." The names were officially made known, but it is only by chance that this paper, alone among all others, was able to say on what machine, and is now able to say the accident occurred at Amiens. In another accident an officer broke a leg, and his mechanic was killed. Again there was no information except the bare names.

This week an air mechanic in hospital in England writes to his home to say he is alive after a smash, and the letter finds its way into the papers,—for which he may get into trouble, poor chap. Presumably the officer-pilot with whom he was flying was also damaged, but no casualty is reported officially. Again, an officer is reported in the Press to have arrived in Birmingham with two broken legs, and to have remarked that he was lucky not to have been damaged by the bombs

he was carrying. No casualty to an officer of the R.F.C. appears in the official list to account for this.

As may be seen from the remarks above, all the news we have had of the R.F.C. is bad news. Except for this the R.F.C. might not exist. Such few newspaper correspondents as manage to come anywhere near our troops in France report splendid charges by our cavalry, accurate shooting and noble endurance by the gunners, unflagging cheerfulness, fine rear-guard fighting, and sanguinary bayonet work by the infantry, and yet never say a word about the "airmen" as they would love to call them if they ever had anything at all to say about them.

What does this silence mean? Is it that the R.F.C. is working with the French troops in the centre of the Allies' line and is never seen by our own troops? Is it that the R.F.C. is a failure and is doing nothing? Or is it that the Official Bureau is hanging up all information about the work of our military aviators? Or, again, is it that those in charge are too ignorant of their business to know what information they may safely give out? Personally, I incline to the two latter explanations, though it is possible that in the withdrawal of our forces, which is described according to the writer's taste either as a "masterly strategic retreat," or as the rout of a "beaten and broken army," the officers on General Henderson's staff who are supposed to send in reports to the War Office are too busy with more important matters to mention the actual work of the pilots. In any case, the Press Bureau's duty to the British Public is to make known considerably more than has been reported hitherto.

Even the most ignorant member of the Public is now interested in aircraft, for, after the experiences of Antwerp and Paris, he is beginning to expect a raid on London, and one hopes that when the Press Bureau is at last put in charge of intelligent beings it will issue some news about the R.F.C., and also about the R.N.A.S., just to persuade people that we do possess aerial forces which are worth something.

The Good Work of the R.F.C.

By various indirect and circuitous routes I learn that the R.F.C. squadrons with the Expeditionary Force have been doing very good work indeed. From a French source, quoted elsewhere, I hear that the machines go out a flight at a time on reconnaissance, and remain in the air for anything between an hour and two hours, and that invariably they obtain information of high value.

It was not to be expected that our aeroplanes could cooperate with artillery as the Germans do, for our pilots have simply not had the experience. During the manoeuvres of September, 1913, we were only able to raise about 50 machines all told, and they were used entirely for general reconnaissance. Presumably practice in working as range indicators for artillery on a large scale would have been obtained this Autumn, before the annual manoeuvres began, but the outbreak of war stopped it, and though a certain amount of such practice of a purely experimental kind did take place early this year, the number of pilots who took part in it was very small, because so few machines were available. In consequence, though we have now plenty of machines, many of our pilots, especially those of the Reserve, have never flown over artillery fire in their lives and would not know how to act if ordered to do so. Nevertheless, I hear that in certain parts of the fighting line—parts which ap-

parently have not supplied any of the wounded who have been interviewed by the Press—our aircraft have been of the highest value in directing artillery.

The Lament of the Aviator.

One curious plaint reaches me, to the effect that as soon as a German aeroplane appears over our lines our men, and the French also, start blazing at it to such an extent that it is impossible for a British or French aeroplane to get up and go for it without as much risk of being brought down by our fire as the German. Apparently the men, our troops especially, have not been sufficiently educated in the difference between our aeroplanes and the Germans, and presumably all our officers have not displayed the forethought of a certain cavalry officer who came to this office just before leaving for the front and commandeered all my best photographs of British, French, and German aeroplanes, wherewith to explain to his men.

One hears also that some of our aeroplanes have been highly successful as bomb-droppers, though the Press has not mentioned the fact. It is rumoured—I sincerely hope without foundation—that one of our machines and its occupants were blown to pieces by their own bombs owing to a fall. If this is so it shows an extraordinary mistake somewhere, for the only bombs which should be used are those which only become "alive" after a drop of 300 feet or so, or else those fired by a time-fuse which is lighted just as it is dropped from the machine. Of course, in the event of a machine falling and catching fire on the ground, the bombs would explode within a few seconds, and some such accident either to a British or French, or even to a German machine falling inside our lines, might give rise to such a rumour.

Taking it all round, despite the silence of the Press Bureau, it may be taken that the R.F.C. abroad has done very good work, and has more than paid its way. The genuine soldier hates advertising himself, but he has a certain pride in his corps, and I can quite believe that even the most soldierly members of the R.F.C. feel that the squadrons on active service have been unfairly neglected.

Something well over 100 machines went across the Channel at the start, which is a disproportionately large number compared with the size of the Army we sent, and I know that many more have been flown over since by various pilots of the Reserve. Also, I hear that the R.F.C. has been comparatively lucky in the matter of casualties—in fact, as one soldier put it to a friend of mine, "Flying is a gentleman's job, compared with the poor blighters' in the trenches." The same idea, somewhat differently expressed, was hazarded in this paper when Colonel Seely was talking nonsense about his "band of brave young men." The real difference is that the military aviator is in some danger in time of peace, and not in very much more danger in time of war, whereas the foot-slogger is in no danger at all in peace and in very great danger in action. It averages about the same over a period of years, but in action the aviator has the more pleasant as well as the more distinguished job.

Filling up the R.F.C.

Still there are bound to be casualties. Also there are bound to be vacancies caused by the weaker men being invalided or sent off for a rest, and some of those hurriedly accepted for service will be found useless—Heaven alone knows why some of them were accepted at all. And further, one may assume that when this war is over we are going to have an Army—a real Army, not merely the three or four army corps we threw across the Channel in a hurry a month ago—so that the R.F.C. is bound to be quite a big organisation before long. Consequently there will be room for all the officer-pilots who are now being trained, and for the pick of the present "Waiting List," and for plenty more besides, as well as for hundreds, and possibly thousands, of N.C.O.s and men.

At present the R.F.C. in all its branches is as full as the Royal Naval Air Service was indicated to be last week, and in precisely the same way there is still room for good men if they can prove that they have special qualifications. Therefore, any man of the right sort, who cannot at the moment obtain a commission in a line battalion, and cannot get an appointment to the R.F.C., but who can afford the time and money to learn to fly, will do well to set about it at once. Some youngsters who cannot fly have been selected for training at Brooklands on the remains of the Bristol and Vickers school box-kites—I believe there are one or two left after all—and probably on Maurice Farmans, but the man who can send in an application to the War Office backed by fact that he has already taken his certificate, and by a further testimonial to the effect that he can fly rather better than the average box-kite pupil, seems, judging by any common-sense standard, to have a better chance of being picked out of the "Waiting List" than any of the applicants who cannot fly. Of course, it means a pure gamble of £75, but there are plenty of men who can afford it, and who are ready to back their opinions to a bigger amount than that on matters of considerably less importance. And even after the war it may be very useful to know how to handle an aeroplane.

The officers of the Department of Military Aeronautics at the War Office are just as courteous as those of the Air Department at the Admiralty, and cannot persuade themselves to be rude to anyone. They even return courteous replies to enquiries from journalists, which is the highest test of all—*vide* Mr. Kipling on a certain "Ulysses Gunne,"

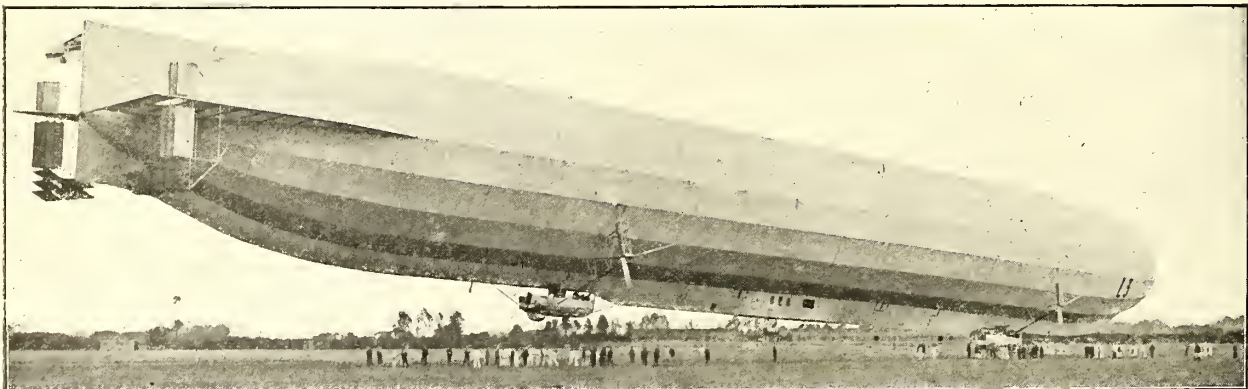
"Whose mode of earning money was a low and shameful one.

"He wrote for divers papers which, as everybody knows,

"Is worse than serving in a shop, or scaring off the crows."—

Consequently, it will save much of the Nation's valuable time if would-be military aviators will try and qualify themselves in some special way, at least to the extent of learning to fly, before they begin worrying overworked officials with their applications, for even the civilian clerks at the War Office who have to write formal replies to letters are overworked at present, and no longer, as the late Sir W. G. Gilbert put it,

"Like the fountains in Trafalgar Square, they play from ten till four."



L. 3.—The Naval Zeppelin stationed at Hamburg, which has been scouting in the direction of the British Fleet. It was probably this machine which bombarded Antwerp.

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N.C.O.'s and Men.

There ought also to be room before long in the R.F.C. for really intelligent mechanics and artisans, judging by some of the recent efforts of the new drafts. Only a few days ago, I am told by an engineer who was there, a brand new Henri Farman was landed at Shoreham and buckled its chassis. The whole thing could have been put right in half a day by two or three men, and flown back whence it came. As it was, a gang of men arrived on a motor lorry in charge of a sergeant, who had apparently never seen an aeroplane. To get the engine out they started by cutting all the wires between the tail-booms—they did not trouble to unscrew the strainers. Then they were astonished when the tail-booms collapsed. Next they propped up the main planes, and some civilian mechanics had to show them how to get the propeller off the engine and how to disconnect the engine from the back-

plate. Then one hobo, clambering about the machine in nailed boots, fell through the lower plane. Finally they put the engine on the lorry, put the main planes on top of it with half their length hanging out at the back, and most of the men sat on the inner end of the lower plane to keep it down on the lorry. When they left, the overhanging ends of the planes were jumping feet in the air at every bump, and it was reckoned that inside five miles the whole machine would be a wreck, and about £700 of the country's money would have been wasted, for only the engine would ever be fit to use again. All this money could have been saved by sending one pilot and three or four decent mechanics down on a car.

Yes! There certainly seems room for mechanics in the R.F.C., but those who wish to join had better delay applying till a little of this kind of thing has thinned off the new drafts and made room for better men.—C. G. G.

Germany's Overwhelming Air Fleet (?)

One of the most interesting of recent letters to the Press was that from a Mr. Hyndman telling of the weird tales he had heard from two American "oil engineers" who had just come back from Germany.

Here are his words:—"They (the two Americans) paid a visit to the flying station, and estimate that there were over 50 Zeppelins ready waiting to start, and hundreds of aeroplanes ready also. There was immense activity in constructing new craft and in training men, as many as a hundred aeroplanes being in the air at once with learners. From general conversation they gathered that there would be a great combined attack by the naval and aerial fleets at some auspicious moment."

Curiously enough a friend of mine recently met two other Americans, who had a very similar tale to tell. It appears, as the papers have stated, that Germany is laying herself out to buy American sympathy, and also to impress American citizens with her enormous strength in the air. Americans leaving Germany are filled up with the most astonishing stories, and other things. They are feasted and banqueted and entertained, and finally are (literally) escorted to the station by brass bands. Naturally they cannot help believing something of what their kind hosts tell them. This story, which gives the impression of 50 Zeppelins at Johannisthal, is apparently either due to Mr. Hyndman not understanding the American language, or to those Americans being exceptional liars. Mark that Mr. Hyndman does not say they saw 50 Zeppelins on that ground ready to start. They merely estimate there were—somewhere in Germany—50 Zeppelins. The statement that "they paid a visit to the flying station" is a separate statement from their "estimate," which was presumably based on what they heard there, not on what they saw.

A Zeppelin shed is not built in a month. And Zeppelins do not camp out in the open. Mr. W. E. de B. Whittaker was at Johannisthal three days before war was declared and there was then the one single shed, which can hold two Zeppelins.

As was shown on a map in THE AEROPLANE a year or more ago, there are something like 45 air-stations of all sorts in Germany; many of these are only landing grounds with a few aeroplane sheds. One need only show such a map to any American already predisposed towards believing in Germany's power, and show him one shed at Johannisthal which can obviously hold two Zeppelins, to make him believe that each of the 45 stations has two Zeppelins. Then if one admits modestly that some of them are old, or under repair, he immediately estimates for himself that "there are over 50 Zeppelins ready waiting to start."

It is not so long ago that Colonel Seely almost convinced the House of Commons that Great Britain had 160 aeroplanes "ready waiting to start," but a personal inspection by Mr. Joynson-Hicks reduced the number to 30. A similar sum in proportion would probably give the correct figures in this case.

Zeppelins cannot be built in secret places, or even in factories intended for other work, and they take 9 months to build. The last Zeppelin in process of building before the war was,

I believe, about No. 22. A number of the earlier ones were destroyed, and two of the most recent also, and at the beginning of the war there were estimated to be eleven in working order. Accelerated construction may have brought out three more, and perhaps three have been destroyed since war began. Making every allowance in Germany's favour there cannot be more than a dozen Zeppelins fit to put to air.

If they all make a raid on the British Fleet nothing could please our sailors better. A Zeppelin cannot rise higher than 6,000 feet, which is within rifle range. As soon as they appeared a signal would be made "Zeppelin shooting begins to-day."

There are, besides, probably four or five Parsevals of quite recent date, and perhaps one or two of the Gross type, but Germany sets no store on "non-rigid" airships. In addition there are the Schütte-Lanz "rigids" of Zeppelin form, but built of wood instead of aluminium. No. 1 was a failure and was wrecked. No. 2 was badly damaged and had to be rebuilt, so that she is probably out again by now, and is probably the one used against Russia (and, one gathers, destroyed by Russian artillery) last week. There may be a No. 3 but she was not out before the war began.

As to Germany's aeroplanes. She started the war with anything between 1,000 and 1,500. Allowing for breakages by learners, losses in action, smashes owing to good pilots making bad landings when flying across country, her output is probably balancing her losses. Most of the machines would be needed with the Army, and the British Fleet has little to fear from the rest, for by the time they are low enough to drop bombs with accuracy on any ship they are well within range of its quick-firers.

A hundred learners in the air at once sounds a great deal, but probably it was a special day in honour of our American friends. I have seen thirty aeroplanes at a time in the air at a British military school where the total number of machines available was very much less than at Johannisthal.

Still, as a study in figure-faking, the German authorities, Mr. Hyndman, and his American friends have provided us with an interesting specimen, even though, as I feel sure it is, unintentional on Mr. Hyndman's part.—C. G. G.

Spy Mania.

William Tomlin, postmaster of Eastchurch, his wife, his daughter, and a visitor, Lydia Abbott, were charged at Sittingbourne last week under the Official Secrets Act. It was stated that three plans of the aviation school at Eastchurch were found in furniture at Tomlin's house, and the defendants were arrested on a charge of unlawfully retaining plans of a prohibited place. Tomlin and his wife said the plans were left by a lodger who had been employed on electric light work at the aviation school. They were found in a bedroom after the lodger had left. Miss Abbott said she knew nothing of the matter. The Bench remanded Mr. and Mrs. Tomlin in custody, and admitted the two young women to bail.

Many of those connected with aviation in its earlier days will remember Mr. and Mrs. Tomlin as the proprietors of lodgings at which they received every attention and considerable kindness.

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German Aircraft.

BY W. E. de B. WHITTAKER.

It is apparently customary among German firms supplying aeroplanes to the Army to design transport wagons or trailers suitable for their special types of machines. All those who are familiar with the picture papers of the last four years know an antique photograph showing a German copy of the Nieuport dissembled and mounted on a special Benz car chassis. To-day that picture is common to every one of the somewhat premature histories of a war which has not made a serious beginning. The trusting public is assured that it represents a German military aeroplane of the latest type packed for transport. It may have been once, but it is not so at the present time. The modern German military aeroplane is too big for such treatment. The simple chassis common to the majority of German aircraft makes it possible for the machine to be towed after a motor-car, on which spare wings are mounted. The wings of, so to speak, the first line, are placed in wing carriers alongside the fuselage as has always been the practice with the Blériot monoplane.

Another method of arrangement in common use is to mount the entire machine, with wings folded, on a special trailer which is attached to a motor-car. This system has its advantages in that the mechanics attached for duty with the aeroplane in question can travel with their kit and a number of spare parts and tools on the car itself. The disadvantage lies in the waste of road space.

It is the practice in the German army, as it would appear to be in ours, to transport aeroplanes as much as possible by their natural element—the air. That is to say, that after reaching railhead in the customary manner they are assembled and flown to their stations. Nevertheless, transport is provided for all machines.

Quick Delivery.

On the day of our first visit to Johannisthal there were eleven Austrian officers waiting to take delivery of Albatros machines. By the next afternoon some half-dozen of them had flown away to Vienna, and the rest were to leave on the following day. These were the last deliveries to a foreign Power (even though an Ally) permitted by the German Government. Henceforth, all machines were to be turned out under military supervision for the Imperial Army. No civil pilots, even if of German birth, were allowed to fly without a permit signed by the officer in charge of the aerodrome. These permits did not enable a pilot to make a cross-country flight, however short in duration. The only reason for such a rule would seem to be a desire to prevent any pilot flying a machine out of the country.

In the waiting-room of the Albatros works are two interesting cartoons. One shows a Zeppelin dirigible flying with a fleet of thirty-four Albatros biplanes passing by in close formation. Inscribed below is the statement that for the price of one Zeppelin thirty-four aeroplanes can be bought. The second cartoon shows a modern battleship steaming underneath a fleet of aeroplanes stretching in quarter-column far into the distance. Below this, it is said that 750 Albatros biplanes can be acquired for the price of one battleship!

Attention to Details.

As an instance of the attention given to detail by the Germans the following may be quoted. As I have said before, the popular type of chassis resembles fairly closely that of the Morane-Saulnier monoplane. The axle is hinged in the centre, and moves up and down at the extremities in the forked ends of the chassis struts. Shock is absorbed by rubber cord closely resembling that used in a Sandow exerciser. In France and England these parts on similar landing carriages are left uncovered. On German machines the forks and shock absorbers are neatly encased in leather, like the steering-gear joints on some cars. Thus, the rubber is protected from the weather, and, further, in case the rubber breaks, the axle is held in position by the leather.

It has apparently been realised by the German General Staff that tractor biplanes are inherently unsuitable for reconnaissance and also that the earlier types of propeller biplanes are inefficient, and effectively obsolete. Therefore, it would seem that they have represented to various firms that a modern biplane on the lines of the Henri Farman would find favour in their

eyes. Thus such machines as that produced by the Ago Company have come into being. Even the L.V.G. and the Albatros appear to have given some thought to such a design, though I have not actually seen either a photograph or plans of their productions.

Offensive Aircraft.

There is no reason to suppose that the German aeroplane service intend to devote very much time to the dropping of bombs. The dirigible attends to that method of spreading fear and destroying morale. It is realised—or, if that is too strong a term, held—that the little damage possible with the amount of high explosive it is possible to carry in an aeroplane does not justify the waste of men and machines, which might just as well be engaged in useful reconnaissance.

It may be as well at this point to make some reference to the dropping of bombs over Antwerp from a German Zeppelin. This appears to have raised considerable indignation in ill-informed quarters, and the United States, as one might expect, is foaming with unrepressed condemnation of the German action. That the inhabitants of Antwerp should be annoyed is only human. Under the terms of the Hague Convention international agreements were drawn up by which nations agreed among other things "(iv, To prohibit, for a period extending to the close of the Third Peace Conference (not yet held) the discharge of projectiles from balloons or by other new methods of a similar nature." As neither France, Germany, Italy, Japan, Russia, nor Spain were signatories to this declaration, it is, as the British official manual on international war states (Land Warfare, p. 24, footnote), "therefore practically without force."

Further, as to the dropping of projectiles on the non-combatant part of the town, it is laid down in the same manual (Land Warfare, p. 34, par. 123) "A town which is defended by detached forts, though they are at a distance from it, is liable to bombardment, for the town and forts form an indivisible whole. The town may, perhaps, contain workshops and provide supplies which are invaluable to the defence, and may serve to shelter a portion of its garrison when not on duty." War is not simply an extended game of Kriegspiel played under the heavens by men. It is something that in the nature of things must be ghastly and ruthless. Nations fight to win, and are justified in taking every means to that end short of useless barbarity. War is no time for the discussion of the humanities. There has been far too much abuse of the German for his brutality in attack—abuse which, if victory had lain the other way, would have been unheard. Such brutality as the Germans have been called upon to use has served their ends, and has spread that terror of their name which can only have helped to bring about such success as has fallen to their arms.

The prevalence of the tractor aeroplane in Germany has acted against the efficient designing and constructing of an aeroplane capable of carrying a Q.F. Up to the present time all efforts have been devoted to perfecting aircraft for work of known value. It is better to possess aeroplanes highly efficient for the purposes of reconnaissance, and for that purpose only, than to have aeroplanes which are capable of many uses but are effective in none.

Little has been done from similar reasons towards the construction of aeroplanes with more than one engine. At Stuttgart it is rumoured that there is an aeroplane fitted with two Argus motors of 100-h.p., but so far as can be gathered no trials have taken place before the war began.

The Russians in France.

As this paper goes to press it is announced that 200,000 Russian troops have been landed in France to reinforce the Allied Armies. These troops were, it appears, shipped from Archangel to Leith, and some to Cromarty, whence they trained to Southampton and elsewhere. Hence the holding up of North London Railway traffic. All France knew of their arrival by September 2nd. The British public is only allowed to know a week later. A hint was given of this movement last week. Possibly a week hence we shall be allowed to know that several thousands of our Indian troops have been in France for quite a while.

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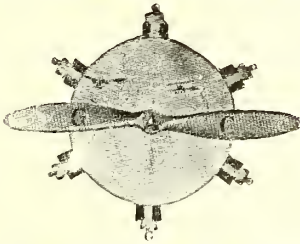
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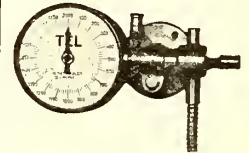
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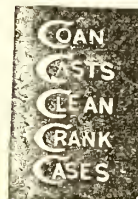
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From the "London Gazette," September 1st:—

SPECIAL RESERVE OF OFFICERS.

ROYAL FLYING CORPS (MILITARY WING).—The undermentioned to be second lieutenants (on probation). Dated August 29th, 1914: Clifford Alban Hooper, Harold Blackburn, and Francis Conway Jenkins.

From the "London Gazette" Supplement, September 3rd:—

WAR OFFICE, SEPTEMBER 3rd. — ESTABLISHMENTS:—

ROYAL FLYING CORPS (MILITARY WING).—Lieut. G. B. Stopford, R.A., from the Reserve, to be a Flight Commander, to be seconded, and to be granted the temporary rank of Capt. whilst so employed (August 8).

FOOT GUARDS.—Grenadier Guards.—Lieut. to be Capt. and to remain seconded: Basil H. Barrington-Kennett.

From the "London Gazette," September 4th:—
SPECIAL RESERVE OF OFFICERS. RESERVED UNITS:—

INFANTRY.—3rd Battalion the Connaught Rangers. The undermentioned to be second lieutenant. Dated August 4th, 1914, on probation: Roy DelaCombe.

From the "London Gazette," September 7th:—

The undermentioned temporary appointments are made at the War Office. Dated August 5th, 1914:—

To be a General Staff officer, first grade (Assistant Director). Dated August 5th, 1914; Major W. S. Brancker, Royal Artillery, and is granted the temporary rank of lieutenant-colonel whilst so employed.

To be a Deputy Assistant Director. Dated August 5th, 1914: Captain (temporary Major) H. Musgrave, Royal Engineers, Squadron Commander, Military Wing, Royal Flying Corps.

General Staff officer, second grade. Dated August 5th, 1914: Major B. D. Fisher, 17th (Duke of Cambridge's Own) Lancers.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS:—

ROYAL FLYING CORPS (MILITARY WING).—Archibald Graham Weir to be second lieutenant (on probation). Dated September 5th, 1914.

NAVAL.

The following appointments were made at the Admiralty on September 3rd:—

ROYAL NAVAL AIR SERVICE:—W. E. Birch, entered as Flight Sub-Lieutenant, for temporary service, and appointed to the "Pembroke," additional, for Calshot Naval Air Station, to date August 31st.

The following was notified by the Admiralty on September 4th:—

Probationary Flight Sub-Lieutenant E. R. Whitehouse has been confirmed in the rank of flight sub-lieutenant, and appointed to the "Pembroke," additional, for the Isle of Grain Naval Air Station, to date August 27th.

The following appointments were notified by the Admiralty on September 2nd:—

C. Grahame-White has been appointed to the "Pembroke," additional, as temporary flight commander for special service, to date August 10th.

R. T. Gates has been appointed to the "Pembroke," additional, as temporary flight lieutenant for special service, to date August 10th.

The following appointments were made at the Admiralty on September 1st:—

Mr. T. Darke Mackie has been appointed to the "Pembroke," additional, for Naval Airship Station, Farnborough, as flight lieutenant (E), for temporary service, with seniority August 31st.

Squadron Commander E. L. Gerrard, to the "President," additional, for special service in the Air Department, to date August 31st.

Probationary Flight Sub-Lieutenants.—J. M. D'Arcy Levy

and B. C. Méats, to the "Pembroke," additional, for course of instruction at the Central Flying School, to date August 29th.

PROMOTION.

Flight Lieutenant (E).—T. R. Cave-Brown-Cave, promoted to the rank of Flight Commander (E), with seniority July 31st.

The following appointment was made at the Admiralty on September 7th:—

ROYAL NAVAL VOLUNTEER RESERVE.—E. M. Speakman has been granted a temporary commission as lieutenant, R.N.V.R., and appointed to the "Pembroke," additional, for special duties in connection with the Naval Air Service, to date September 5th.

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Squadron Commander E. L. Gerrard, who is appointed for special service with the Air Department, has been one of the instructors at the Central Flying School ever since the foundation of that establishment. He was one of the first four officers of the Navy to learn to fly, and the first officer of the Royal Marines to do so. He was made Major by brevet last year for his services.

It will be noted from the official appointments above, that Mr. Claude Grahame-White and Mr. Richard T. Gates have been appointed Flight Commander and Flight Lieutenant respectively in the Royal Naval Air Service. It is not officially made known on what system the rank of special appointees is granted, but if it is based on flying ability alone, then, of course, Mr. Grahame-White should be a Wing Captain at least. Mr. Gates is well known to everyone as the very able manager of the London Aerodrome at Hendon. He has great ability in handling men, and has an illimitable store of energy and capacity for hard work. He did good service in the Boer war, for which he has the King's and Queen's medals and sundry clasps, and was then granted an honorary commission in His Majesty's Army, so that he has on a previous occasion been a commissioned officer. One hopes to see him employed in a position where his proved ability will find scope.

Mr. E. R. Whitehouse, who has been confirmed in the rank of Flight Sub-Lieutenant, will be remembered as a notably good flyer on the small Deperdussin monoplanes, and later on Handley Page machines, and White and Thompson Curtiss flying-boats.

Mr. Harry DelaCombe, who is well known to all who have had to do with aviation, was recently appointed a Flight Lieutenant in the Royal Naval Air Service. He was one of the earliest members of the Royal Aero Club and has acted officially for the R.Ae.C. at all the important flying meetings here and abroad. More recently he has, in partnership with M. Pierre Maréchal, the son of a famous French Admiral, been in business as a Government contractor, and has supplied much valuable material to the Navy. His knowledge of all things concerned with aeronautics is unrivalled, and if he had not chosen to go into business he could have become famous as a writer, for he possesses an exceptional gift for expressing himself clearly and readably on paper. Mr. DelaCombe was an officer in the Queen's Navy in his earlier days, and now returns to his old service at a time when his knowledge is most useful. He is at present doing duty in the Enlistment Department for R.N.A.S. mechanics, with Squadron-Commander Aldwell.

Mr. Harry DelaCombe's son, Mr. Roy DelaCombe, whose appointment as 2nd Lieutenant, on probation, in the 3rd Battalion, The Connaught Rangers, to date August 4th, was notified on September 4th, will be remembered by many as being on the staff of this paper.

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It was officially announced on September 5th that the aerial defence of the coast and of London is being undertaken by the Navy. Seaplanes patrol the East Coast for hostile aircraft and searchlights are used at night. Guns for defence against aircraft have been stationed on the roof of Government buildings and other places that might become the special

objects of attack. A reserve of aeroplanes is near at hand to attack and pursue hostile craft. The Headquarters of the Naval defence system is at Hendon.

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On Saturday night, about 9.30 p.m., it was reported that a Zeppelin airship had been sighted over Woolwich flying towards London. Shortly afterwards Squadron-Commander Porte, R.N., accompanied by an armed passenger started from Hendon on the 100-h.p. Deperdussin in search of it. Nothing was seen, and it eventually turned out that the "Zeppelin" was our own Naval Airship No. 3 (Astra Torres) making a trip on her own account, of which the troops at Woolwich had been duly warned. However, the promptness of the Naval Air Service in turning out will be reassuring to nervous Londoners, and it may further console them to know that several other air stations, the whereabouts of which must not be disclosed, are also on the look out for hostile craft, and are equipped with fast armed aeroplanes.

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A large number of letters have been received from those wishing to enlist in the Royal Naval Air Service lamenting that they have had no reply to their letters. As was announced in last week's AEROPLANE, unsuccessful applicants who have not received an official letter up to Monday last, September 7th, must understand that it is impossible to send individual replies, and they are asked to accept the thanks of the Admiralty for volunteering their services—"which can doubtless be well employed in some other branch of His Majesty's Forces."

A visit to this branch of the Royal Naval Air Service last week revealed the fact that although the staff is working long hours every day there still remained some thousands of letters unopened. Several thousands had already been dealt with, and those which came from men who appeared likely to be useful were set aside for further communication. Many of the letters were of considerable length and contained a huge assortment of testimonials and so forth, and therefore the mere reading of the letters and the sorting of them out into the "possibles" and "impossibles" occupies a great deal of time, and even when this is done it necessarily takes still more time to sort out the two or three thousand "possibles" so as to find a matter of 500 of the most promising whom it is worth while to interview, so as to select the men for the 150 or so vacancies.

No doubt when the present vacancies are filled up it will be found that the general expansion of the Air Service makes

it necessary to enlist several hundred more, but even so the few hundreds chosen from the last batch of letters are likely to provide men for some months to come. It is, of course, obviously impossible, with every Government Department as busy as it is, to answer all the thousands of letters received, and therefore one can only repeat the advice given in last week's issue. Any young man who has not a wife or children dependent on him had better go and enlist in the Army, where men are really needed.

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It is announced that owing to the enormous surplus of men of the Royal Naval Reserve, Royal Marine Reserve, Royal Naval Volunteer Reserve, and Fleet Reserve, a Naval Brigade is being formed to operate on land with the Army. Two full brigades of infantry are in process of organisation, and a squadron of aeroplanes from the Royal Naval Air Service will be available to co-operate with this force when it is sent abroad.

In connection with the above it is stated that the uniform will be "naval uniform executed in khaki." The prospect is not alluring, "assassinated" might be a better word. Surely something better could be devised for use, "When sailor-man go soldier-walkee" than a sailor's jumper and trousers in khaki. For instance, even if the Southampton Supermarine is not found suitable for naval use, surely its designer's ingenuity as a sartorial artist could be turned to good account in this direction.

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Mr. F. Warren Merriam has been appointed to the Royal Naval Air Service as Civilian-Instructor. This is a new title. Mr. Merriam's long experience as an instructor with the Bristol Company, where he was exceedingly successful in passing pupils for their certificates on the old box-kites, should be of high value to the Service. He has the gift of teaching lucidly and practically without confusing the pupil's ideas with too much theory. Mr. Merriam is now stationed at Hendon, where he has already done good work. He expresses his satisfaction with the Grahame-White School box-kites, of the modern balanced-tail type, which he finds very easy to handle and obedient to their controls. On Sunday last he made his first flight on an 80-h.p. Henri Farman (Mr. Thornely's former "looper") and handled it steadily and carefully, making a notably good landing for a first attempt.

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Hard work continues in the Southampton district. The new Avro "pusher" seaplane has been out, but does not appear as



TUITION AT HENDON, SEPT., 1914:—Left to right—Back row: Mechanic S. Cannon, Flight Sub-Lieut. Allen, Instructor Winter, Civilian-Instructor Merriam, R.N.A.S., Flt. Sub-Lt. Riggall, Instr. Shepherd, Instr. Osipenko. Second row: Flt. Sub-Lt. Giles, Flt. Sub-Lt. Vere, Flt. Sub-Lt. Whitehead, Mr. A. Murray Ross (Manager Grahame-White School), Flt. Sub-Lt. Perry, Flt. Sub-Lt. Haines. Front row: Mr. Strickland, Flt. Sub-Lt. Strong, Instr. Manton, Mr. F. W. Polehampton.

good as the tractor of the same make, which has done exceptionally well. Much flying has been done on Sopwiths, including both the tractor and Bat-boat type—the latter seems now to be winning greater appreciation, as it deserves. Henri Farman and Wight "pushers" have also been largely used, and one judges that the R.N.A.S. is giving new pilots plenty of work. One learns somewhat circuitously that a tractor manned by Flight Sub-Lieuts. Lord Carbery and Sidney Pickles collided with a buoy in alighting, and was badly smashed, but that the crew escaped without much damage. A new Sopwith twin-float "pusher" of great size has been out for test and is reported as flying excellently.

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A British submarine arrived at Harwich on September 4th bringing a German naval lieutenant and a mechanic, who were captured in the North Sea, 60 miles out from Harwich. They were found clinging to a damaged seaplane which had broken down. The two men were rescued and made prisoners, and after some bombs and valuable documents had been taken from it the hydroplane was sunk. It is also reported that the submarine wisely collected the engine.

The prisoners were sent to the fort. They walked quietly, smiling and smoking cigarettes. It appears that the machine developed engine trouble at a considerable height and glided down comfortably, but made a bad "landing." The officer (Sub-Lieut. Karl Wilhelm Kurzen) was thrown into the sea, but his mechanic, who was strapped in, sustained severe cuts on the face. The officer swam to the seaplane and climbed on one of the wings. In that position he is reported to have remained for over 20 hours, until taken off by the submarine.

MILITARY.

Captain B. H. Barrington-Kennett, whose promotion in the Grenadier Guards is noted in the "Gazette" for September 3rd, was one of the earliest and best Military aviators. He was the first Adjutant of the Royal Flying Corps, Military Wing, and was noted in the King's Birthday honours last year for promotion to Major by brevet on attaining substantive rank of Captain. Presumably his gazette as such will follow in due course. He is now acting as Staff Captain with the Expeditionary Force.

Mr. F. Conway Jenkins will be remembered as a very promising pilot of the Avro biplane in the early days of flying. He also escaped unhurt from a rather ugly-looking accident to the Blackburn aeroplane at the start of the Circuit of Britain race in 1911. He gave up flying in order to attend to his motor business, and in it he has been very successful. On the mobilisation of the Expeditionary Force, Mr. Jenkins was employed in the organisation of Mechanical Transport, and the good work he did then obtained for him the task of organising the mechanical transport of the new squadrons of the Royal Flying Corps.

Mr. Harold Blackburn, whose appointment on probation is noted, will be remembered as the inventor and constructor of the Walton and Edwards "Colossoplane" at Brooklands. Afterwards he flew well on Mr. Robert Blackburn's monoplanes, and on an Avro.

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The "Evening News" correspondent, writing of the siege of Namur, reports, on the authority of a Belgian pilot:—"On Friday the garrison had the pleasant surprise of a visit from the English airman, Captain Waldron, who flew from Maubeuge during the bombardment.

"He landed in the town with no other damage than a slight accident to his landing chassis on his arrival. He left again for the south on Saturday by car."

This is practically the only news that has appeared concerning any British aviator. One gathers indirectly that Capt. Waldron got safely away from Namur.

A correspondent writes:—

"From one of our wounded I have heard of an accident to one of the Army machines. He said that while his regiment was disembarking at Boulogne several Army pilots were observed coming across the Channel. The last one descended beautifully into a field just outside the town for petrol. As he was leaving and had just left the ground the machine seemed to fall over on one wing tip, and then fell to the ground completely smashed up. The pilot's name and make of machine I could not find out. The pilot escaped unhurt.

"I notice in last week's issue of THE AEROPLANE in the notes from France that you wonder how a German machine got through to Paris. I asked this same soldier how it was not brought down, and he said that the British soldiers had strict orders not to fire at any aircraft whatever, owing to the number of aviators who have been brought down by their own men, through the latter not being able to discern between a hostile or friendly machine. It is true that a few German machines have been 'winged' by our troops, but that has been after doubt as to its nationality has been entirely removed."

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The "Morning Post" reports that John Baker, a mechanic in the Royal Flying Corps, who is in hospital at Netheravon, in a letter to his parents at Boston, Lincs, tells of a thrilling experience he had when flying to France with an officer of the Flying Corps. He is suffering from a broken leg and other injuries. He says that while flying over Boulogne at a height of 3,000 feet something went wrong with the machine, and the engine stopped. The officer said: "Baker, our time has come. Be brave and die like a man. Good-bye," and shook hands with him. "I shall always remember the ten minutes that followed. The next I remember was that I was in a barn. I was removed to Boulogne and afterwards to Netheravon." [This incident emphasises the need for further information concerning the R.F.C. The assumption is that the pilot of the machine was also damaged, yet no R.F.C. officer appeared in the Casualty Lists up to the end of last week. It strikes one as rather strange that a mere engine stoppage over Boulogne should impress the pilot with the idea that his "end had come." One would like to hear more of this incident.—Ed.]

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The "Express" reports that a lieutenant of the Royal Flying Corps who arrived at Birmingham had two broken ribs. A shell from the German lines had upset his machine, and in the fall his ribs were broken. "I am very lucky to be alive," he remarked, "for there were two bombs in the aeroplane. Fortunately for me, they did not explode." [This is the first direct evidence of the fact hinted at in THE AEROPLANE last week that our aeroplanes are being used as bomb-droppers.—Ed.]

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The "Daily Express" says that all the wounded soldiers who have arrived at Aldershot have stories to tell of the remarkable artillery practice by the German guns, which they ascribe to the close co-operation between the guns and aeroplanes. "Again and again," said a sergeant of the Northampton, "the aeroplanes came circling round over our positions, but at too great a height for our guns to reach them. We watched them, and whenever a flutter of white paper or other material came down from them a shower of shrapnel followed immediately, so well aimed that we invariably had to move to save ourselves from being annihilated."

The "Express" also reports, on the authority of a wounded soldier, Private C. Bell: "Some of our fellows are playing tricks on the air scouts by pretending to be occupying a different position when they see the airships coming, and then shifting to their real positions when the scouts have disappeared. It is comic to watch the Germans shelling the wrong positions owing to this trick." [Undoubtedly the idea has merits, and shows that our men are working with intelligence.—Ed.]

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Apropos the difficulty which our troops are likely to experience in telling which are friendly and which are hostile aeroplanes, a correspondent points out that the Bristol Company have, or had, a kindred establishment at Halberstadt in Germany, and there may be some difficulty in distinguishing between British and German Bristol machines. One gathers, however, that neither the German nor the British Armies are using any machines of Bristol design, though, of course, the British Army is using a large number of Bristol-built B.E.s, these machines being notable for their workmanship and finish. Apparently the Bristol Company has given up supplying aeroplanes of its own design, doubtless owing to the pressure of B.E. orders. This is much to be regretted, for, though

some of the firm's efforts have not been wholly successful, at any rate the "scout" designed by Mr. Barnwell was a brilliant performer, and one feels that had Mr. Barnwell and Mr. Busted had a free hand in producing a larger machine they would have been able to turn out something equally good.

FRANCE.

Capt. Oswald Watt (Australian Army), who recently joined the French Flying Corps, has now been appointed Captain in that Corps, and has been given command of an escadrille of Blériots detailed for the defence of Paris, with headquarters at St. Cyr. Prior to this appointment he was granted his Military Brevet on the strength of a fine flight from Mourmelon to St. Cyr in a fog without a compass.

M. Louis Noël is in his escadrille, and MM. Verrier and Chevillard are in a Farman escadrille detailed for the same purpose. M. Jullerot was, a week ago, a sergeant in an infantry regiment. He should soon win a commission.

It is reported from France that M. Garaix, the pilot who has put up so many height records with numerous passengers on the Paul Schmidt biplane, 160-h.p. Gnome engine, has distinguished himself by flying over the German forces, carrying a load of 200 kilos (450 lbs.) of melinite, which he discharged on the Germans. It is said that he made two trips of this kind, but the third time he never came back. One is forced to assume either that he was shot down or that the machine had an accident in landing and was blown to pieces, but at the same time one hopes that his disappearance merely implies that he has been brought down and captured.

It is also reported that the airships, both French and German, have been practically useless, at any rate for use in daylight over the field of battle, and that the most useful machines in the French aviation service have been the Henri Farman, Maurice Farman and Voisin biplanes, and the Blériot monoplane. It should be noted that the Voisin biplane is very largely of steel construction.

The French civilian aviators who have been called up for service, were apparently last week still awaiting dispatch to the front, and were all intensely keen to go. Undoubtedly, however, there will be plenty for them to do in the near future, especially in guarding Paris against attack by aircraft. Excellent accounts have been received of the heroism of the 300 officer-aviators and N.C.O. and "Sapeur" pilots, who have been at work since the beginning of the war. It is stated on excellent authority that they have had singularly few accidents of any kind, and that only seven French military aviators have been killed so far. Apparently, also, so far as the Eastern frontier is concerned, they have been singularly successful in keeping the German military aviators on their own side of the firing line.

On an average, both French and British officers make flights of between an hour and two hours' duration over the German forces. Six machines go out together in a group, and are then followed about an hour later by another similar group, and it is said that they come back almost invariably at their expected time.

One learns from a mutual friend in France that M. Louis Noel, the popular Hendon pilot, was detailed about a fortnight ago to run a regular dispatch service between Brussels and Calais, which however fell through. Since then he has been putting Blériots and Farmans through their military tests. The French aviators seem quite cheerful about the progress of the war, and they are absolutely sure of victory in the end. They learn from those who have been with the troops at the front that the Germans estimate their own killed at about 200,000, and that the German troops are nearly worn out by the steady resistance of the combined British and French forces.

One learns with great regret that M. Delaplane, who was well known to many in this country as a pupil at the Bristol School, was killed on August 27th when testing a Morane monoplane at Villacoublay.

One of the latest additions to the French Volunteer Flying Corps is a Danish aviator named Krause, who, despite the Teutonic appearance of his name, is said to do very good work.

The French papers are particularly cheerful about the ex-

ploits of the French aviators. The "Matin" describes how one Chef d'Escadrille started out on a reconnaissance in a thick fog, flew for an hour relying entirely on his compass, came down over a heavy fire to between 600 and 1,000 feet to acquire the necessary knowledge of the situation at the town to which he was sent, and then disappeared in the fog again, and returned home unhurt.

Another aviator was very much pleased with himself because four reconnaissances having to be made during the day, and the rest of his escadrille being out on other missions, he flew from early morning till late in the evening, making all four trips himself, and covering about 600 miles.

M. Jules Védrines is apparently, as usual, a sort of stock ject, and has, according to the papers, been shot at and wounded, the wound, however, being received in a motor accident. Nevertheless, one feels sure he will do good work, for his courage is undoubted.

Apparently the military aviators have developed a new sport of their own. Every evening when they have finished flying, they count the number of bullet holes in the wings of their machines, which they mark with a red circle, so that they shall not be counted next day. One of them counted 37 holes as the result of the day's work, and said that he intended to apply to the French Aero Club to have this world's record "homologated." All the pilots who are flying reserve machines or replacements to the front, hope when they arrive to be employed in the escadrille to which they deliver machines. There they are generally received with acclamation on account of the arrival of the machine, and are then told to fly back with the old one, but they keep on doing it cheerfully, with the hope that one day it will be their turn to join the squadron actually on service.

An "Exchange" telegram dated September 1st reads:—"Captain Voisin, of the aerial squadron, has just addressed his heartiest felicitations to Lieutenant Campagne on account of the latter's success in completing his observations although his equipment was struck by a shell which stopped the motor. He succeeded in vol-planing from an altitude of 1,800 metres, bringing back with him results from his observations which enabled him to locate the position of two bodies of artillery."

[Probably this is the origin of the rumour that M. Gabriel Voisin, who is no relation to Captain Voisin, of the "Aviation Militaire," had been mentioned in despatches. The "Exchange" Co.'s translation of the French is too funny to spoil by editing.—Ed.]

A "Times" correspondent writing on the 31st says:—"The artillery fire (German) is directed by aeroplanes, which are superior to the French in being able to maintain themselves longer in the air, though they do not show the same amount of dash in attacking the aerial enemy. These German machines are painted a silver grey, and have the look of eagles in the sky. They hover continuously over the lines."

Later on he says:—

"A cavalryman described to me the destruction of a troop of German cavalry by a French airman close to the town of C—. The machine hung a moment in the air like a hawk over its quarry, and then let fall its bomb, which wiped out the cavalry troop."

[A bomb which would wipe out a troop of cavalry would have to be of extraordinary size. One can only assume that this was part of M. Garaix' work mentioned above.—Ed.]

A telegram dated September 1st from Paris reports that another German aeroplane flew over Paris that evening and dropped two bombs. The first fell near the Gare St. Lazare. Fire was opened on it from the roof of the Crédit Lyonnais, where a piece of artillery has been mounted. A few seconds after a second bomb was dropped in the Rue Hanovre, near the Opéra. The machine then wheeled and turned north-east. As it flew over the Place de la Bourse two private soldiers opened fire with rifles, but the German machine, which was flying at a great height, rapidly disappeared. The soldiers, who are said to be British, in an interview with Reuter's correspondent, said that during the last few days two hostile machines had been brought down by a special gun made for the purpose. The soldiers were followed by an admiring crowd.

Another biplane flew over Paris about 4.30 p.m. on August 31st and was seen by Reuter's correspondent. It is stated that bombs were dropped on the city, but no damage was done.

When the bomb from the first aeroplane fell in the Porte Saint-Martin quarter on Sunday afternoon people in the vicinity, believing that it was an explosion of gas, ran from all sides and in all directions to see what had happened. The fire brigade speedily arrived, and the Mayor and Commissary of Police hastened to the scene. Measures have been taken to prevent gatherings, and the aviation service is taking precautions. Parisians are showing no disposition to be unduly disturbed by the incident. The French people is beginning to appreciate the true value of the German efforts to create a panic, and declines to be impressed by them.

A German aviator who visited Paris on September 3rd had to fight his way out. An eye-witness recounts that when the German was over the Romainville fort two French aeroplanes came up, one on either side. The German opened fire and the Frenchmen replied. The battle in the air lasted 10 minutes. The German continued to rise all the time, and finally reached such a height that the Frenchmen were unable to follow, and he was ultimately lost to sight in a north-easterly direction. [The incident was described with much "corroborative detail" in the "Evening News" by Mr. A. G. Hales, who tries to make one believe that the German came so low that it was possible to see his flowing fair hair and beard. Mr. A. G. Hales' account is not quite so funny as Mr. Robert Hale's descriptive efforts—as for example, the "Cinema Hounds"—but it approximates to them.—Ed.]

"The Exchange Telegraph Co." goes one better over the same incident. It reports:—"The Petite Gironde," Bordeaux, states that when a Taube aeroplane tried to approach Paris to-day two French aeroplanes gave chase near Vincennes. The Frenchmen circled above the German and sent a charge of grape shot into the wing of the Taube, which came down and was smashed to pieces." "Grape shot" from an aeroplane is perfectly precious.

On September 3rd a German aeroplane dropped several bombs over Belfort. One fell in the cemetery and exploded with great noise, but no damage was done. In order to avoid the fire from the French forts the aeroplane made a détour and passed over Swiss territory. [If much of this is done we shall have Switzerland in the war, for she will hardly stand the violation of her territory as the stolid Dutch have done.—Ed.]

The Paris correspondent of the "Telegraph" says:—The love of Parisians for fishing in the Seine is proverbial. They stand in long lines during the warm summer days and evenings to "tantaïse the gudgeons" as they say. The other day when one of the German aeroplanes flew over Paris a couple of bombs were dropped on the city, one falling into the Seine and the other exploding on the quays. The old anglers continued to watch their floats undisturbed by the incident. One remarked afterwards, "Those fellows have no manners. The 'boche' let fall his bomb into the river to frighten away the fish just when they began to nibble. Most unsportsmanlike, but what can you expect of barbarians?" [This is quite one of the best stories the war has produced. Anyone who has ever poached his neighbour's stream with a dynamite cartridge will realise the slaughter of innocent fishes to be caused by a bomb.—Ed.]

Twenty-four of the crack French civilian aviators at St. Cyr, including MM. Verrière, Chevallard and Noel have been told off to fly Henri Farmans and Blériots fitted with mitrail-leuses worked by a military passengr. These are to patrol over Paris three at a time to guard against attack by German aeroplanes.

M. Gilbert, the famous Morane pilot, is reported to have received the Cross of the Legion of Honour for brilliant feats as an air scout, in the course of one of which he was wounded.

A wounded private of the Royal Engineers gives an account of the pursuit of a German aeroplane that had come over the

British lines by a French machine and a British one. The British flier managed to ascend to an altitude above the German, who was fired on from the British machine. The German aeroplane thereupon glided to earth and alighted without accident. Astonishment was expressed at the fact that on running to the machine the British found the pilot dead. The "Morning Post's" aeronautical expert says: "The explanation, of course, is that all German naval and military flying machines have dual control, so that the passenger can take charge. If he is a qualified pilot, he can save disaster in such circumstances; if he is not, there are very small chances of avoiding catastrophe." [One may add that if there had been a passenger the soldier would probably have mentioned the fact, and would not have been surprised at the machine landing safely. The real interest lies in the fact that very many German aeroplanes are inherently stable and that their chassis are so strong and well designed that they can, with any luck, land at their gliding angle without control. Even on British machines we have had several cases of machines righting themselves when the pilot has let go everything and simply hung on to the sides.—Ed.]

The "Daily Express" of September 7th reports that in an interview, Private Gillespie, of the Royal Scots, who is now in St. Thomas' Hospital, described an exciting duel which he witnessed in France about a week ago between a French and a German aeroplane. "The French pilot started to fire at the German with a revolver, and the German pilot replied. For nearly a minute we heard the faint 'crack-crack-crack' of the two revolvers away up in the blue.

"Then the two aeroplanes separated, and there seemed to be no definite result, when, to our surprise, the German aeroplane began to drift away downwards.

"A minute or two afterwards one of our chaps came running up to say the German aeroplane had fallen and its pilot was dead.

"We brought down no fewer than four German aeroplanes by rifle-fire alone, the machines being smashed and the pilots killed."

Trooper Craig told the "Express" representative that a thing that worried our men at first was the habit of German aeroplanes dropping a long-tailed coloured fire or firework above their bivouac at night, generally about midnight. This was to give the German gunners the range when they should resume the attack at dawn. [This seems a doubtful story, for a coloured fire at night would scarcely give the range accurately.—Ed.]

Another method of range indicating is described by a straggler from Namur to a "Chronicle" correspondent. He says that two or three German aeroplanes went up, located the British trenches and batteries, and dropped from immediately above a kind of flimsy, shining paper which floated about and by its reflection gave to German gunners their range and direction.

According to the "Telegraph," a wounded French officer who kept a diary of events, wrote thus:—

"Sunday, the 30th. To-day we have assisted at a duel between a biplane and a monoplane. I had nearest to me the German biplane, which fell into the English lines. The officer in charge of it had with him a child of six years, a German also. They were only wounded." [Which shows that rumours of almost impossible happenings are as prevalent at the front as in this country.—Ed.]

The "Echo de Paris" relates that recently a German battery was captured in its entirety by French cavalry, after the gunners had been killed by a hail of bombs dropped by aviators.

A communiqué issued in Paris on September 3rd says:—"The measures taken for chasing German aeroplanes with heavily armed French machines cruising over Paris have prevented the Germans from flying over the city again to-day."

The "Express" states that the electric light is cut off in frontier towns so as not to assist aviators in finding their way.

Lieut.-Aviator Roeckel, with Capt. Simon as observer, had an extraordinary escape.

When 6,000 ft. above Musson Wood (seven miles north-west of Longwy) they were fired on by a battery guarding a dirigible. One shell produced a remou which caused the aeroplane to fall. The pilot checked it at about 200 metres, and landed 300 metres south-west of Longwy in front of the French firing line, which was falling back under a murderous German fire.

The pilot rapidly examined his machine, restarted his motor, and flew away, landing safely an hour afterwards at his starting point safe and sound.

GERMANY.

On September 4th the German War News tapped by Marconi wireless said: "Lieutenants Zalin and Rheinhardt, of the aerial fleet, have been awarded Iron Crosses for distinguished achievements." [Zalin is probably a mistake for Zahn, who is a distinguished military pilot.—Ed.]

The "Frankfurter Zeitung" publishes the following telegram, dated "Main Headquarters," August 27th: "The Zeppelin that appeared over Antwerp succeeded in destroying the gasworks with a well-aimed projectile. The effect produced by the latter could be observed from the fact that all the lights in half of the town suddenly went out. The Zeppelin was fired at by the Belgians, but arrived, via Liège, at its home station at four o'clock." The "Lokalanzeiger" published on August 27th the following account of the Zeppelin attack on Antwerp: "A Zeppelin airship appeared yesterday over Antwerp, and dropped seven bombs whereby 12 persons were killed and a number of buildings destroyed. A hospital is also said to be damaged. A grenade that exploded in the neighbourhood of the Royal Palace did but little injury."

From the "Times" September 7th (extracted from the "Cologne Gazette.") ". . . And then they howl because our bold airmen throw bombs on Antwerp and Paris! Is it not our good right to use the means which German technique and the genial invention of our Count Zeppelin have put into our hands? . . . But we can bear all this, because our good German conscience speaks for us—and the convincing power of German blows."

It is stated in Berlin that the Zeppelins are working under great difficulties. The Krupp aeronautic engineers declare that it is necessary for the airships to fly at a great altitude to escape the enemy's gun range, and accurate bomb dropping is difficult under these circumstances. The bomb throwers are said to be encased in armoured steel baskets suspended hundreds of feet below the cars of the Zeppelins. This entails great risk to the engineers, and already one has been shot by the enemy, while the Zeppelin was undamaged.

RUSSIA.

Mr. H. Williams, of the "Chronicle," reports from Petrograd on September 4th: "It was only the artillery and the aeroplanes of the Germans that were effective. Their Zeppelins were useless. The Russians brought down three of them, and used the petrol for their motor-cars."—[This seems a very unlikely story. One would scarcely find much utilisable petrol among the wreckage of an airship brought down by gun-fire. Also one has more than doubts about "three" Zeppelins being brought down. Probably the fact is that a Parseval or a Gross was brought down by leakage caused by rifle fire.—Ed.]

Kosminsky, the well-known Russian flier, who performed over Pekin last year, who had been making flights with an officer of the General Staff, interviewed by the "Russkoye Slavo," speaks of the cold experienced while he was scouting at between 3,500 and 5,000 metres, at which altitude scouting was easily possible, as the air was very clear. "Through Zeiss binoculars we could distinguish different portions of the enemy's army, and even identify carts loaded with stores." A petrol pipe broke, he turned towards the Russian frontier, to prolong the glide to reach Russian territory, and got home safely.

The "Daily Telegraph" correspondent at Petrograd reports: "A Zeppelin airship has been shot down near Sjerade. In the car were thirty men, including two staff and two artillery officers. A couple of the crew had been wounded. They had with them a quantity of bombs and other explosives. It appears that they had not time to destroy all their plans and negatives before being captured.

A Russian officer was asked whether it was true, as reported, that General Samsonoff and his staff had been killed by a bomb from a Zeppelin. He replied: "This rumour was current among us, too, but to my knowledge is false. Another explanation was given. In the whole region the railways were quite uninjured. An armoured train broke through on the left wing, where the staff was posted, and suddenly opened fire upon it."

BELGIUM.

A message from Ghent to the Amsterdam "Telegraaf" states that on September 5th an aeroplane flew over the town, dropping two bombs, but causing little damage, and that on the 4th an aeroplane passed Eecio. A bomb was dropped on the way, but did not explode.

A German aeroplane flew over Ostend on September 6th at a great height.

It was reported from Maestricht on September 3rd that two aviators, probably Belgians, made a flight over Liège and dropped sheets of papers, in which they urged the population not to lose courage and informed the people of the French and British victories and the Russian advance in East Prussia.

Mr. Richard Harding Davis, the famous war correspondent of the "New York Tribune," writing in that paper, says:—"When I was a prisoner with them (the Germans) one of their own aeroplanes passed over us. They thought it an English machine, and Count von Schwerin, commanding the 7th Division, and all his staff at the same time began shrieking commands, some to shoot, others not to shoot. They were like men gone suddenly crazy. It was a most pitiable exhibition. Their conduct throughout can be explained in only one way. They are men who know they are in the wrong, that their cause is unlawful, and, like a man who enters a house as a burglar, they do not hesitate at murder."

The following official statement was issued at Antwerp on September 2nd:—

"A Zeppelin airship was reported at 10.30 yesterday evening from the forts on the south of the city and on the Nethe River. The airship passed over Alost towards Termonde and Ghent, and then returned towards Antwerp and attempted to fly over the town, but the heavy artillery fire kept it outside the outer fortifications.

"At 3.30 this morning five or six bombs were thrown from the car. The ship then flew in the direction of —, where a bomb was dropped near the station. It then proceeded towards —. Seven bombs were dropped in the Parc du Rossignol close to some houses where two hospitals were established. The houses, which were flying Red Cross flags, were damaged. Ten or twelve persons were slightly wounded. The airship's evolutions took ten minutes.

"The projectiles were different from those used on the former occasion. The bombs thrown to-day were covered by thin envelopes, held together with mushroom-shaped rivets. They were filled with special bullets calculated to inflict horrible wounds. Such a type of bomb has never been used by artillery, and is completely unknown to them. It is made on the same model as that used by the notorious Bonnot robber band in France."

The "Central News" correspondent reports:—"From what I have heard from a Belgian officer stationed in one of the forts here, there is every reason to believe that the Zeppelin was damaged by the fire to which she was subjected. When she escaped she was observed to be listing badly, and it is thought likely that she came down between Malines and Temsche.

"One of the bombs thrown by the Zeppelin cost thousands of fish their lives. It exploded in the famous fish-pool, with disastrous results. The surface of the water is thick with dead fish, which are selling cheap to-day."

Mr. Alfred Stead, correspondent of the "Daily Express" at Ostend, reports September 6th:—"Falling Uhlans to terrify the population, the Germans are now employing aeroplanes. These fly over open and undefended towns and villages, and from time to time drop bombs. A Taube dropped two bombs yesterday on Ghent, where there is not a soldier. A vigorous

protest to Washington was sent off, and probably there will be four bombs instead of two next time. The actual damage is small, but the moral effect is great. These bombs were arrow-tailed. One did more damage than the other. It fell on a factory. By a lucky chance the bomb missed the workshop, where sixty men and women were working."

The "Times" reports on Sept. 7th that a German biplane which was flying in the neighbourhood of Loiteghem, west of Malines, had its planes broken and was obliged to come down. The two occupants were made prisoners.

The "Evening News" correspondent, quoting a Belgian pilot, who escaped from Namur, reports:—

"We intercepted a wireless message sent out by the besieging force to a German spy in Namur, asking for information as to the exact position of the Aviation Centre, from which we were accordingly moved. Two airmen who went up from the town during the siege were obliged to come down in the German lines, since when nothing has been heard of them."

About a dozen of the Belgian air service and two aeroplanes arrived at Buc, where they were awaiting a lift.

An "Exchange" telegram from the Hague on September 1st reads:—

"A German biplane flew over Cambrai to-day and dropped bombs in the vicinity of the railway station, destroying a bridge. The aeroplane was fired at and brought down, its two occupants, one of whom was wounded, being made prisoners."

[This is something of a mystery, for none of our troops were known to be within miles of Cambrai as late as September 1st. We were then somewhere near Laon. It is, however, possible that we may have been holding a fort somewhere near Cambrai.—Ed.]

The Antwerp correspondent of the "Telegraaf" reports that on August 29th a biplane appeared over Brussels, which was at once fired upon by the Germans. The French pilot twice circled the town, dropping hundreds of pamphlets with the inscription: "Prenez courage! Délivrance bientôt!" and then disappeared after giving an exhibition of upside-down flying. [If this story is true it is one of the most priceless examples of pure impudence in the face of the enemy that history provides, only equalled by the famous race for a bet to the Boer trenches and back between two cavalry officers in the South African War. One of them was, I believe, Colonel (then Captain) Kenna, well known at Olympia. The "Central News," evidently seeking for effect adds, "The supposition is that the airman may be Pégoud." One may therefore note that others besides M. Pégoud have looped, and that M. Pégoud is not a biplane pilot.—Ed.]

SERVIA.

The following semi-official statement was published at Nish on September 2nd:—

"The day before yesterday an aeroplane was seen in the direction of Jania and Lechnitza. The military authorities gave orders that quick-firers should open fire upon the aeroplane. The aeroplane was hit, and fell to the ground, riddled with bullets and bespattered with blood. The pilot was killed instantaneously. Upon him were found sketches, which seemed to have been made before his ascent, but the details of the movement of our troops which he had taken during his flight presented no interest."

SOUTH AFRICA.

A cutting from a South African paper says:—"Mr. Gerard Hudson has offered to the authorities for use in the present crisis the two Curtiss hydroplanes, which he recently imported into South Africa. One of these flying boats, carrying passengers, has demonstrated with marked success the powers of this craft over Durban waters for the last week or so. Mr. Hudson's offer is of considerable importance in view of the fact that the Curtiss flying boats are not only the first hydroplane craft introduced into South Africa, but are also the only ones in the sub-continent at the present time. Their pilot, Mr. Cutler, also enjoys the distinction of being the only certificated pilot from the Royal Flying Corps acting in the country at this juncture."

[Apart from the fact that Mr. Cutler is not connected with the R.F.C., one learns that these particular boats, although

able to fly under favourable circumstances, are quite unfit for use under ordinary Service conditions.—Ed.]

CHINA.

The Japanese Embassy in London on Sept. 7th received a telegram from Tokyo stating that the Japanese naval commander reports that two Japanese seaplanes reconnoitred Tsingtao on Saturday and dropped bombs on the railway station and the barracks. One seaplane was struck by a number of shots, but both returned safely.

[The few seaplanes owned by Japan are of German make. All told Japan does not own more than a dozen aeroplanes, of which perhaps four are serviceable for water work.]

FROM DENMARK.

THE AEROPLANE'S Danish correspondent writes as follows: his report is given unedited:—

Comprehensive provisions are taken in Paris to protect the irreparable art treasures in the Louvre museum against bombing from Zeppelin airships. Most of the valuable paintings have been packed up in iron chests. Venus from Milo and Mona Lisa have been brought to rooms which are bomb-proof. Over the Greek room with Phidias' masterly works several layers of sand-bags have been arranged. The top floors have been decamped and made to lazaret rooms, and from the roof the flag with the Red Cross waves.

From Stuttgart is wired on Thursday night (August 27th) 11.5 p.m.:—During his stay at Stuttgart Count Zeppelin told in an interview that for certain reasons he could tell but little of the voyages made by his airships. But every day they made reconnoitring flights, and they had already flown a long way in over France. When he was asked if his airships would fly, too, over London, he said with a smile: "Surely the moment will come; be only patient!"

The Thursday evening edition of "Berliner Tageblatt" announces that the old Zeppelin has offered his services as a volunteer, and when they were refused, because he is too old (70 years), he drove to the place of the war by himself.

The war correspondent of the Vienna newspaper, "Neue Preid Presse," wires Thursday, 27th, from the battle at Krasnik:—The German airship, "Schutte Lanz II" fought with the Austrians and three times flew into the hostile fire and rested in the air for 13 hours. In the neighbourhood of Lvangarod it came into almost a hail of bullets. South-east of Lublin it was at the same time exposed to musketry and ordnance fire, 25 bullets bored themselves through the bags of hydrogen, but the Russian shells (grenades) did not succeed in hitting their mark and exploded long from the airship without doing any harm. A piece of a percussion-shell flew into the gondol without doing any harm. The harm done to the balloon-covering were repaired during the flight. The Commander-in-Chief of the airship gave in an announcement of the numerous observations he had made during the voyage.

A Norwegian officer, who has returned from Paris, has given his impressions in an interview to "The Morning Leader," Christiania, telling, among others, that the French aviators are all very brave, so that it will be easy to give away the 1,000,000 francs given by the manufacturer Michelin.

The 7th German list of killed soldiers contains under "Feld-fliegertruppe" (that is company of officer-pilots with superior military brevets) the name Lieut. Fische.

The German aviators carry with them on their aeroplanes carrier-pigeons to bring the observations quick back to the headquarter. The German newspapers arriving here tell that every day their aviators fly over Russian Poland and throw down summons to the population to raise against the "Russian monsters."

Roald Amundsen has in an interview to the big Norwegian newspaper, "Aftenposten," of the 26th, told that it will be necessary for him to postpone the North Pole Expedition for another year, mainly because he cannot get material for the aeroplane department, on which, in his own opinion, much depends. As will be known Roald Amundsen has offered his services as an aviator, and that of a balloonist has been offered by the well-known Francisco Cetti, who has, too, given his balloon to the Army.

Of Germany's 12 Army and Naval Zeppelin airships only 6 remain. The first was destroyed outside the forts of Liège on August 6th, one was set on fire by the French aviator, Fink,

by Metz August 20th, one was taken prisoner between Lille and Badonviller, August 23rd, one by Antwerpen, and one by Bruxelles, one was destroyed by the storm in Luxemburg. But besides the Germans have equal to the Zeppelins the Schutte Lanz airships, of which the Army possesses one which fought with the Austrians by Costnov, and when I visited Berlin a week before the war, two Schutte Lanz ships were almost finished, one for the Army, and one for the Navy.

The newspapers, too, contain a protest from Germany's best-known aviator, Hellmuth Hirth, who is at the front, against the rumours that he had been shot in an attempt to sell aeroplanes to foreign Governments.

[One is glad to have this denial of Herr Hirth's death.—Ed.]

A proclamation from the Belgian headquarter orders that Antwerpen shall be quite dark, without lights, in the night, and forbids to shoot unnecessary up in the air. The headquarter warns against panic, and writes: "Do not see airships over all. For example, the planet Jupiter, which rises at 8 o'clock and goes down at 11 o'clock, is no searchlight of an airship. Airships do not carry searchlights with them at all. Do not at once telephone to the authorities. Be quiet."

A New Power Plant.

A new and most interesting engine has been recently designed by the Salmson Company, specially to meet the requirements of the manufacturers of airships. It consists of 2 9-cylinder engines, each of 300 b.h.p. Each of the engines is complete in itself, that is to say, it is provided with its own radiator and water-circulating pump, its radiator and oil pump, also two magnetos and two carburettors, exhaust collector, revolution counter, hand starter, and also compressed air starter, etc., etc.

The two engines are coupled to the propeller shafts by means of two clutches and two special couplings contained in the central casing, which allows the one or the other or both propellers to be driven by the one or the other or both engines at once.

The control system is extremely simple and consists of a balanced operating lever for the clutches, and a hand-wheel for the couplings, each being conveniently situated above the central casing.

The unit is mounted on a pressed steel frame and provided with a system of eight adjustable buffers enabling the engine to be very readily fixed, and, at the same time, distributing

the weight and stresses in an equal manner to the "nacelle" or car.

The total weight is about 27 cwts. made up as follows:—

Two engines of 300-h.p. at 8½ cwts each, 17½ cwts.

One clutch and coupling casing complete, 4½ cwts.

Two sets of radiators and gear, 3½ cwts.

One supporting frame, 1½ cwts.

The consumption of petrol is guaranteed not to exceed 0.55 pints per h.p. hour.

Though primarily intended for airships this power-plant seems to have great possibilities for seaplanes of the large type. A "Bat-boat," for example, with these engines in the hull, a tapered fuselage instead of tail-booms, and the crew on the deck seems a most promising vehicle.

To an Anonymous Critic.

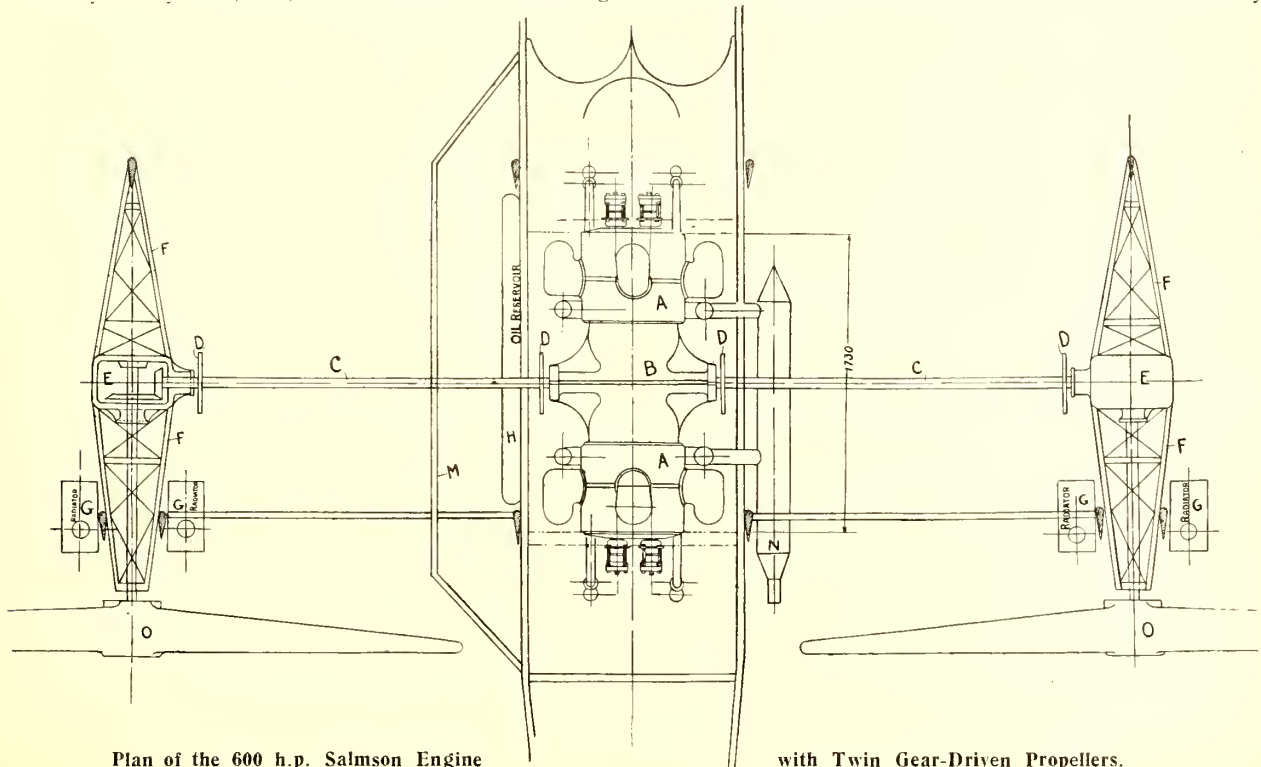
Anonymous letters are of two kinds, those written about a person, which may be injurious, and those written to a person, which are almost always entertaining. The following note, type written, was received by the editor of this paper last week:—

"Your article on the R.N.A.S. is likely to prevent anybody not suffering from swelled head from even applying. Perhaps that is doing the country a service—keeping away the very type of man that is needed! You never learn the lesson that a still tongue makes a wise head. Your main object seems to be to show what a damned shrewd fellow you are. Or you are probably venting spleen on someone in particular.

"And then your remark, 'One wonders what the R.F.C. were doing to allow Zeppelins to exist.' That's damned clever, isn't it?"

Apart from this gentleman's language, for which the writer apologises to his readers, the letter is interesting as indicating a fresh outlook. As the gentleman evidently holds pronounced views, perhaps he will be good enough to describe, in somewhat more restrained words, "the very type of man that is needed" by the R.N.A.S., unless, of course, he is so wise that his tongue is paralysed. He is at liberty to preserve his anonymity if he wishes, though, merely as a guarantee of good faith and not for publication, one would like to know more of such a vehement personality.

It would also be well if he would explain how the very modest qualifications suggested as desirable in officers of the R.N.A.S. necessitate a "swelled head." The state usually



Plan of the 600 h.p. Salmson Engine

with Twin Gear-Driven Propellers.

thus described is more likely to be found among those who insist on expecting commissioned rank when, to anyone but themselves, it is obvious that they are unsuited to hold a commission.

As to the suggestion of editorial self-estimated shrewdness, one would like to explain once more that the writer has never been guilty of an original idea in his life. All the material in this paper is shamelessly begged, borrowed, or stolen from other people, who know vastly more about their subjects than does the editor. The fact that this material is fairly accurately transmitted is the sole virtue one can claim and it probably accounts for the rapidly growing circulation and influence of this paper at a time when most weekly papers are suffering badly from the loss of their readers' interest owing to the war.

As regards this gentleman's final sentence, it seems that a great many people intimately connected with the R.F.C. are still wondering what they are doing, and are anxiously awaiting news of them. The fact that the Zeppelins existed in that part of the line of battle increases the wonder, for one may fairly assume that if any of our aeroplanes had been there the Zeppelins would not.

A Newcastle Success.

One hears with gratification from a correspondent in Newcastle that the Aviation Department of Sir W. Armstrong, Whitworth and Co., Ltd., has produced a new two-seater scout of considerable merit. The machine has a span of about 28 feet, and weighs 580 lbs. with a 50-h.p. Gnome. The machine was tested for the first time on Monday last and put up an extraordinarily fine performance. The speed of the machine is over 75 m.p.h. with a 50-h.p. engine, although it was expected to be under 70, so that with an 80-h.p. Gnome her speed should be close on 100 m.p.h. In spite of her high speed the machine lands at about 30 m.p.h., and she appears to be very stable indeed. Such a machine should be very acceptable to the Naval Air Service, where high-speed scouts seem to be in considerable favour.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Fine Good	Fine Good	Fine Good	Fine Good	Fine Good	Windy	Windy
Eastbourne	Fine Good	Fine Good	Fine Good	Fine Good	Fine Good	Very Windy	Windy
East Kent...	Windy	but Fine	fine	all Fine	through Fine	the Fine	week Fine
Southampton	Fine	Fine	Fine	Fine	Fine	Fine	Fine

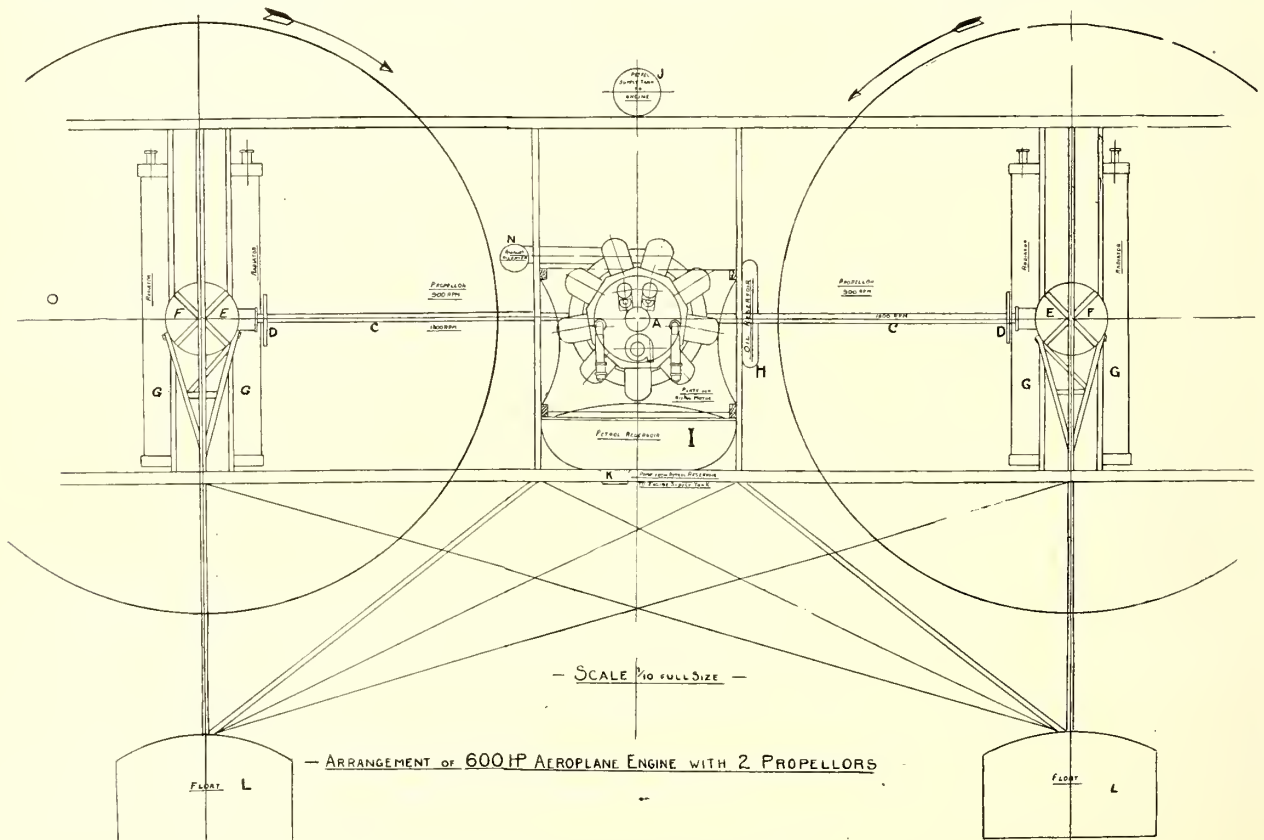
Eastbourne.—AT E.A.C. SCHOOL.—Instr.: Mr. F. B. Fowler. Pupil with instr.: Mr. Cornish Thurs. and Frid. 8's alone: Mr. Bass Sutton Thurs. and Frid. E.A.C. biplane.

Hendon.—AT GRAHAME-WHITE SCHOOL.—Instrs.: Messrs. Manton, Merriam, Russell, Shepherd and Winter. Pupils with instr: Messrs. Carabajal, Morgan, Mumby, Duncan, Easter and Polehampton, Sub-Lieuts. Riggall, Strong, Allen, Giles, Haines, Perry and Rosher. Strts alone: Messrs. Crowe, Strickland and Mumby, Sub-Lieuts. Vere and Strong. 8's alone: Sub-Lieuts. Whitehead and Vere, Messrs. Crowe and Wiles. Machines: Grahame-White propeller biplanes.

AT BEATTY SCHOOL.—Instr.: Mr. Geo. W. Beatty on "dual control." Pupils with instr: Messrs. Cheung (32 mins), Smith (45), Virgilio (45), Lord (45), Hornby (47), Parker (45), Roche-Kelly (35), Whittaker (30), Gardner (15), Whitehead (10), Lieut. Rimington (28). Certificate taken by Mr. Andrew Cheung in very good style. Machines: Dual controlled biplanes.

AT HALL SCHOOL.—During the week Instructor J. Clappen has been out several times flying on Caudron No. 2. Mr. E. Brynildsen made half a dozen good straights, proving an apt beginner. In workshops, mechanics busily overhauling Brevet biplane, recovering wings and tail and rewiring throughout. Machine is expected to be completed in a week's time. In meantime, practice will continue on other school machines. A more powerful motor has been fitted to No. 2 Caudron, which will take the place of the Brevet biplane.

Shoreham.—AT PASHLEY BROS. AND HALE SCHOOL.—Pupils with instr.: Mrs. Joseph, Mr. Cole. Strts alone: Mrs. Vincent. 8's alone: C. Rutler, C. Winchester, J. Woodhouse. Certificate taken: C. Rutler passed without fault, flying at good height. H. Farman and Pashley biplanes.



Front View of Twin Engine 600 h.p. Salmson.

MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. MONDAY to ensure insertion. For the convenience of Advertisers, replies can be received at the office of THE AEROPLANE, 166, Piccadilly, W. Special PREPAID Rate—18 words 1/6; Situations Wanted ONLY—18 words 1/-. rd. per word after

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PHOTOGRAPHS.

AVIATORS ON ACTIVE SERVICE.

PORTRAITS of the majority of the British Aviators who have volunteered for active service during the war may be obtained from F. N. Birkett, 97, Percy Road, Shepherd's Bush, London, W. Unmounted, post free, Sizes 12 by 10 in., 2s. 2d.; 8 by 6 in., 1s. 6d.; 6 by 4 in., 1s. 2d. Mention THE AEROPLANE and write for the list of the largest collection of aviators' portraits in this country.

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A NZANI ENGINE for sale, 125 h.p., 10 cylinder; latest type; perfect condition. Address Stewart, 82, Rosebery Gardens, Harringay, N.

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MISCELLANEOUS.

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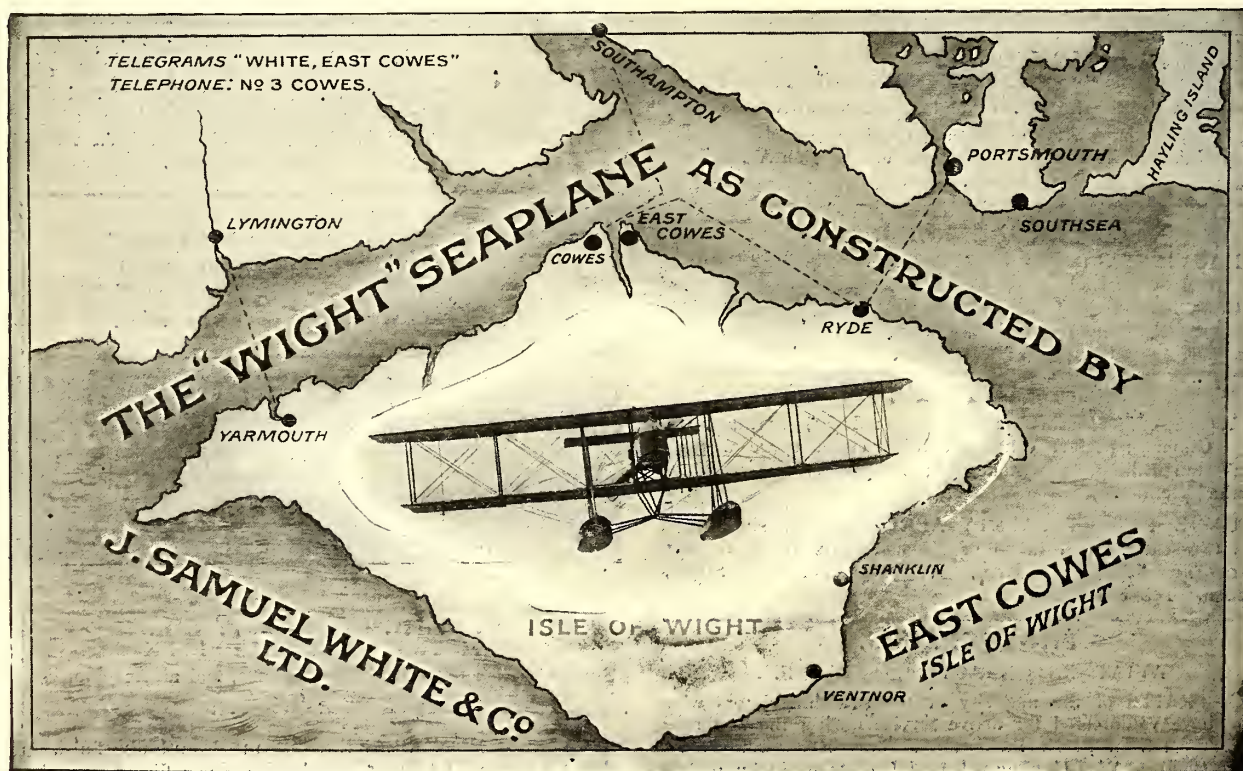
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"THE AEROPLANE," SEPTEMBER 16, 1914.

THE AEROPLANE



Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.
AS A NEWSPAPER.]

WEDNESDAY, SEPTEMBER 16, 1914.

No. 12

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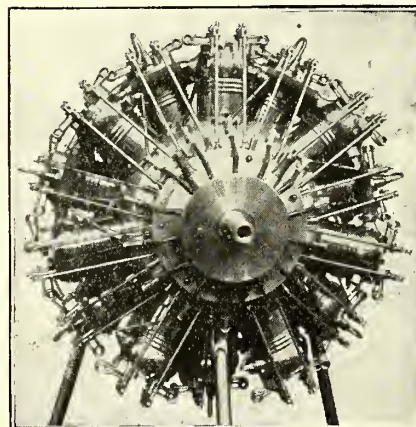
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The R.F.C. on Active Service—and Other Matters.

Apart from casualties before fighting began, for the first time since the war broke out the Royal Flying Corps was mentioned officially in Field-Marshal Sir John French's dispatches published on September 10th.

The first mention occurs in the section of the dispatch referring to August 23rd, when Sir John French tells us that the observation of his aeroplanes seemed to bear out the estimate received from French headquarters that only one, or at most two, of the enemy's Army Corps, with perhaps one cavalry division, were in front of his position. This opinion was confirmed by the fact that cavalry patrols encountered no undue opposition in their reconnaissance. This was at about 6 a.m. on that day. At about 5 p.m. on the same day General French received a most unexpected message by telegraph from General Joffre, telling him that at least three German Army Corps were in front of his position, and that the Second German Army Corps (making a fourth) was engaged in a turning movement on the left of the British troops. He also learned that two French reserve divisions and the 5th French Army were retiring on his right. On receipt of this news General French endeavoured to confirm it by aeroplane reconnaissance, and it was as the result of this that the British Army retreated from Mons to Maubeuge at daybreak on the 24th.

The peculiarity about this information is that British aeroplanes apparently reported in the early morning that the force opposed to the British Army was less than half that which actually assailed it inside the next twelve hours, and then the information which enabled Sir John French to withdraw his troops before they could be overwhelmed by four German Army Corps came from the French Headquarter Staff, and not from our own air scouts, who, however, were able to confirm the accuracy of the French communication, which had, presumably, been obtained by French air scouts.

One would like to have some explanation from officially inspired quarters as to the true inwardness of this, for if it means anything, it means that the information which should have been acquired by our air scouts was not acquired, and fits in curiously with Mr. Tuohy's report to the "Mail" that the British Army was very badly served by its aeroplanes. There can be no possible question as to the skill or bravery of the British military aviators as aviators, but a number of them, especially those called up from the Reserve, are not supposed to be themselves trained as military observers, and the inference to be drawn from this brief reference in Sir John French's dispatch is either that the British aeroplanes were not properly used, that is to say, they were sent out at the wrong time, or at the wrong place, or in insufficient numbers, or else that the observers carried by them were not sufficiently experienced, and were unable to tell the real strength of the forces opposed to them.

One is glad to see, however, that the Royal Flying Corps, as such, has distinguished itself thus early in the war, for right at the end of his dispatch, Sir John French honours them by a special note, which reads as follows:—

"I wish particularly to bring to your Lordship's notice the admirable work done by the Royal Flying Corps under Sir David Henderson. Their skill, energy, and perseverance have been beyond all praise. They have furnished me with the most complete and accurate information which has been of incalculable value in the conduct of the operations. Fired at constantly both by friend and foe, and not hesitating to fly in every kind of weather, they have remained undaunted throughout.

"Further, by actually fighting in the air, they have succeeded in destroying five of the enemy's machines."

It may be thought that this reference to the Royal Flying Corps having furnished most complete and accurate information, is incompatible with the foregoing remarks, but, in fact, though they have unquestionably earned this praise—one gathers that Major Longcroft and Captain Todd have particularly distinguished themselves—it may still be that those responsible for their use were in error during the period between 6 a.m. and the afternoon of August 23rd. It may also be that the number of aeroplanes available for use during that period was insufficient, for one may safely assume that the number of machines incapacitated from flying during the fortnight between the departure of the Flying Corps from this country, until August 23rd, has been comparatively great, and the new machines which have been delivered frequently to the base at Amiens, may not have been sent up by that date to the actual advanced base.

It is particularly interesting to note that the pilots of the Royal Flying Corps have, by actual fighting in the air, destroyed five of the enemy's machines. The number is not very large in proportion to the total number of aeroplanes apparently used by the Germans against our troops, for practically every British soldier who has come home has been emphatic as to the quantity of aeroplanes the Germans had available, whereas the number of those who have even mentioned the existence of British aeroplanes is very small, and only one or two have mentioned fights between British and German machines. It would, therefore, appear that actually a comparatively small number of British aeroplanes were used during the period round about August 23rd to the 26th, and, consequently, a "bag" of five German aeroplanes to their credit is really exceedingly good.

In this connection, it may be well to recall a remark of Mr. Whittaker's in this paper nearly two years ago to the effect that the Royal Flying Corps should be equipped not in proportion to the strength of the Expeditionary Force but in proportion to the Army we should have to raise if we ever became involved in a European War. One may also point out that but for the systematic and determined agitation carried on with this office as its centre the R.F.C. would possess many machines less, and those of less high quality, than it possesses to-day.

German Signalling

Apropos the use of aeroplanes in this war, an American gentleman who came over from Paris a few days ago, tells me that he has met several officers of the Royal Flying Corps in Paris, and that while they were naturally reticent about their own work, their remarks explain one or two things which were rather difficult to understand in the stories about the operations of the German aeroplanes.

Several wounded soldiers have mentioned that the Germans indicated the range of the trenches to their own guns by dropping discs from the machines. Others have told of smoke bombs dropped by the German aviators on to the trenches, which gave the range easily. Apparently, the soldiers got their ideas rather mixed, as one may easily imagine they would do under the strenuous circumstances prevailing when these incidents occurred, and the general idea conveyed was that the said discs were dropped on our trenches in the same way as the smoke bombs. In fact, a friend of mine who had been talking to one of the wounded was quite convinced that the

discs dropped from the German aeroplanes emitted the smoke, which gave the range.

It really seems, however, that the discs are satchels of leather, which the German pilots drop onto their own batteries on returning from reconnaissance over the British troops, and that these satchels contain a sketch-map indicating the exact position of the British trenches. One soldier described minutely how the German guns had been shelling the position held by his battalion for a considerable time without ever getting within 100 yards of them, the shells falling either short or long, but never finding the exact position. Presently, however, a German aeroplane dropped one of the smoke bombs with considerable accuracy on the position, and immediately afterwards the German shrapnel began bursting right over the position, and a number of the men were wounded, almost all of them in their feet or legs, exposed behind the breastwork of the trench, which, presumably, was a very shallow one.

Zeppelin Bomb-dropping.

Various paragraphs have appeared of late rotting the fact that in dropping bombs from Zeppelin airships the man in charge of the bomb-dropping is lowered in a steel basket at the end of a wire to a distance several hundred feet below the airship itself. Some aeronautical "experts" have explained this by saying that the bomb-dropper is placed at the lower altitude in order that he may take a better aim. When one considers that a bomb-dropping Zeppelin would keep at its maximum height of about 6,000 feet in order to be out of range of rifle fire and that the bomb-dropper in his basket could scarcely be more than 500 feet below it at the very most, one sees the futility of this explanation, for the difference in accuracy in bomb-dropping between 6,000 feet and 5,500 feet is practically negligible.

The real reason for the basket arrangement is that should there be clouds in the sky the airship can keep above the clouds until she is in the neighbourhood of her objective, and the man in the basket can then be let down till he is clear of the clouds and can see the country below while the airship itself is concealed from view. He can then communicate with the airship the fact that he is able to see clearly, and the airship herself need not descend any lower. Presumably there is some arrangement of wires which will prevent the basket from spinning round, and so the bomb-dropper can con the airship in the desired direction. The notion is quite a neat one.

The Use and Abuse of Searchlights.

As to the use of searchlights in discovering airships, anyone who has ever driven into a fog bank with big head-lights on a car will realise how little use a searchlight is likely to be on a cloudy night to anybody on the ground. The only hope is that it may discover the bomb-dropper's basket from the airship which has been let down through the clouds in the manner indicated above. On the other hand, to anybody in the dark above the clouds the searchlight would probably appear fairly clearly, just as one may see the headlights of a motor-car coming towards one through a fog, and, therefore, it might give some indication to the crew of the airship that it was in the vicinity of some place on which it was worth while to drop bombs, even if the place itself was invisible.

In the event of an attack by hostile aircraft searchlights may be useful in dazzling the pilot, especially the pilot of an aeroplane, who cannot usually afford to shield his eyes from the glare and leave his machine to look after itself. If it is found that the aeroplane is friendly it is advisable to turn the light away from the machine, particularly if it is about to land, otherwise a bad smash may be caused. Those who have driven cars at night may realise the effect if they imagine

themselves as trying to drive a car through a narrow gate at 40 or 50 miles an hour in the face of a big headlight on another car. Those in charge of searchlights fixed at landing grounds might make a note of this, and remember to turn their beams onto the ground some hundreds of yards in front of the machine which is landing, and so assist the pilot to see on what kind of ground he is going to alight.

An Illuminating Announcement.

The advice recently issued to public authorities to the effect that they should reduce the amount of light in the streets is prompted, no doubt, more by the desire to save certain localities than with any hope of misdirecting the crew of any visiting airship. So long as street lamps are left alight at all, and unless a kindly millionaire erects a roof over the river to hide its reflection from airships at night, there should be no difficulty for any German aeronaut who has had the forethought to procure one of the Underground Railway Company's excellent maps of London, which have been given away so freely, to find his way to any particular district he may desire to bombard.

All the big parks are clearly outlined by street lamps and appear more or less as dark patches and form very good landmarks; if the authorities really wish to mislead hostile aircraft the proper thing to do is to erect long rows of brilliant street lamps across and across the parks, so as to give the impression that they are really thickly populated streets, and thus confuse the navigator's idea of his locality. In a similar way bogus bridges composed chiefly of cables, planks and fairy-lights might be thrown across the Thames, because, obviously, the navigator would take his bearings from the places at which the bridges cross the river.

A member of my staff suggests that it might also be a good idea to erect a dummy St. Paul's, say, somewhere in the middle of Hyde Park, and pretend that the Serpentine is the Thames. One feels sure that Mr. Imre Kiralfy and the other creators of the White City would be only too pleased to assist.

Actually, the only reason for reducing the amount of light concentrated at any one spot, such, for example, as Piccadilly Circus or the Elephant and Castle, is the mere fact that the glare at that point would be so conspicuous that no human being who possessed any of the instincts of a sportsman could possibly resist the temptation to drop a bomb in the middle of it. It is all very fine to talk about the cowardice of attacking unarmed towns and slaughtering non-combatants, but those who have had the greatest experience of all kinds of shooting, from ordinary sporting shooting through the various stages up to big game shooting, tell me that man-hunting is the finest sport of all. To a real sportsman who believes that the essence of sport is that there should be some risk to the hunter, the difference between shooting hand-fed driven birds and shooting unfed driven human beings is only a matter of degree and not of kind, and plenty of people call "drives" sport. Therefore, one can scarcely blame the aeronaut who drops a bomb on the most conspicuous, and, presumably, the most populous, place in sight. Very few men, so far as I know, outlive that peculiar joy which comes of planting a well-aimed stone through a large pane of glass—the inventor of "Breaking up the Happy Home," at Earl's Court and elsewhere, at a penny a shy, was a student of psychology as well as a good business man—so just imagine the genuine glee to be obtained by planting a bomb neatly on the Crystal Palace. It might be barbarous, but it would be very human. Therefore, as the proverb says, "Those who live in glass houses should pull down the blinds"; likewise those who indulge in brilliant internal illuminations.—C. G. G.

Mechanics in the Royal Flying Corps.

Last week, it may be remembered, it was mentioned in this paper that there might conceivably be room ere long in the Royal Flying Corps for really good mechanics who know their jobs. One now learns, quite unofficially, of course, that, though recruiting has stopped, there is still room for a few really experienced N.C.O.s and men of the right sort at the present moment, but only in certain specific trades.

The vacancies of which I hear in one branch recall the story of the parson of a well-to-do parish, who, being dissatisfied with

the amount of the offertory in his church, chose for his text the words of Saint Paul, "Alexander the coppersmith hath wrought me much evil," and proceeded to complain of the prevalence of copper coins in the plate. It appears possible that the lineal successors of the said Alexander—or, anyhow, of the trade union to which he belonged—have wrought much evil in the R.F.C., as one may easily realise when one thinks of the results of tanks which leak through bad repairs, or of bent copper piping which cleverly, if unintentionally, combines the

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qualities of a corkscrew and a sieve. At any rate, I gather that a few really first-class coppersmiths may find places if they apply to the Royal Flying Corps Headquarters at Farnborough.

Also, men with genuine experience of engine-fitting may be accepted for service, and some who have had experience of wire-cable work, who would be trained as "riggers" of aeroplanes; but let it be clearly understood that only the right class of men need apply. At present every shop-boy or helper in a motor-shop who has managed to acquire a third-hand motor-bicycle thinks he is a born aviator and rushes off to offer himself to the R.F.C. in the hopes of being trained at the nation's expense and well paid as a military pilot, and, on the strength of the motor-bicycle, he calls himself a mechanic. Well, that kind of mechanic is not wanted. He is only a nuisance and an expense, and so is the well-meaning, earnest youth who "feels sure" he would make a good flier, but has had no experience.

The kind needed are young, active, hardworking men who know their trades, and who have brains enough to understand that military discipline is not just a fad of the officer class, but is as necessary to the smooth working of the military machine as is correct pitch in a gear-wheel. Such men—and there are some in the world, despite the notorious aversion of the artisan class to law, discipline or order of any kind—may find very nice jobs in the Royal Flying Corps. I do not say they will certainly find them, but I do say it is worth their while to write to "The Commandant, the Royal Flying Corps (Military Wing), South Farnborough, Hants," mentioning their experience and qualifications, and offering their services.

Many of the better-class young men in aeroplane factories or aviation schools may feel inclined to apply on the off chance of securing one of the few vacancies. It would be a pity to take hands away from firms who are making war matériel, but it will be well to remember that the places of the younger men who join the R.F.C. can easily be filled from other trades by middle-aged married men, who would be useless in the Corps.

Doubtless many readers of this paper also know young men of the right kind in other trades, and any such will be doing their friends a good turn and helping the country's service by drawing their attention to the vacancies which, I am assured, do exist. Young mechanics who have had the handling and tuning of high-speed racing engines in successful motor-shops, men from shipyards who have had to do with splicing wire cables, men who have done high-class sheet-metal work, all have a sporting chance not only of a job with good pay, but of seeing some fighting and having some flying if they put in their applications quickly. But remember, only experienced men need apply.—C. G. G.

Room for Experienced Men.

Just at present there is a terrific rush of work in all our aeroplane factories, and despite the willingness of the workers to put in only their best work, inspectors are necessary in fairly large numbers in various workshops. The writer knows of several vacancies for such men to act as "viewers" of material and workmanship. Young men are not wanted, because until a man is twenty-eight years of age or so he is generally a "one shop" man, and in this case wider experience is desired. Therefore, twenty-eight years is about the minimum age at which a man will be accepted. Actually, the class of man most desired is the experienced "charge-hand" or foreman who is worth £3 10s. to £4 a week in any engineering shop. Experience of aeroplanes is not necessary, and experience of internal-combustion engines is not a drawback, but any man with a first-class engineer's training will do if he is a worker. If any readers in the "trade" know of such a man on the look-out for a job, will they please bring this paragraph to his notice and ask him to communicate with "C. G. G." at this office?

"The Lights o' London."

The following notice, dated September 10th, was issued by the Commissioner of Police of the Metropolis, and the assistance of the public generally was invited to give effect to it:—

"In order to render more difficult the identification of particular parts of London, it is requested that arc lights, sky signs, illuminating facias, and powerful lights of all descriptions used outside for advertising or brilliantly illuminating shop fronts be dispensed with.

"Where the shop front consists of a considerable area of glass brilliantly lighted from inside, a reduction of lighting intensity should be effected."

This request is made in connection with the observation of London lighting from above to be made by a naval airship.

Admiralty Warning.

The Secretary of the Admiralty communicates the following statement for publication:—

"For the general safety of the community, the country being at war, municipal authorities are requested to reduce as much as possible the number of powerful electric lights on piers, esplanades, and public places which are visible from seaward or from the air."

Bomb-Dropping.

The following letter from a correspondent who has just returned from Paris is of unusual interest:—

"Sir,—Concerning bomb-dropping on towns, I have been a reader of your excellent paper from the beginning, and have read most of Mr. Whittaker's articles with pleasure and interest. I was fortunate enough to be in Paris last week and to have an opportunity of studying the effect, moral and material, of bombs dropped from an aeroplane. At 6.25 p.m. on September 1st, accompanied by some friends (five of them school-girls returning from Switzerland), I was walking past the Opera when we heard a very loud and sharp explosion. Looking up, we saw an aeroplane, evidently a 'Taube' from the shape of its wings, right overhead. When first seen it was not, I think, much over 3,000 feet high, but began to climb at once. It discharged a second bomb, which fell some distance off.

"The first bomb had fallen 80 or 100 yards from where we were. None of the girls with us were alarmed, though excited and interested. Naturally, a considerable crowd gathered, but the bomb having fallen so close at hand we were able to go and inspect the damage before the gendarmes arrived. The damage was mainly to glass, and would, I estimate, be covered by a £20 note. Very little excitement was shown by the Parisians, and certainly no fear. They seemed chiefly to desire that the Taube would stay long enough to enable the French aviators to catch and kill its crew.

"Now Mr. Whittaker seems inclined to defend the German (or other) bomb-dropping of this sort. He is apparently caught by the mad 'logic' of the Kaiser, that 'necessity' (as the Kaiser judges it) 'knows no law,' and that the Germans are to be exempt from blame because their country refused to sign the proposed agreement prohibiting such a method of warfare. Though it is, unfortunately, legal, nevertheless the opinion of civilised Europe and America condemns such. In addition to being savage and brutal, this method of murder, or attempted murder, of non-combatants, mainly, of course, women and children, is also stupid.

"Like the stupid and brutal 'diplomacy' of the Kaiser and his advisers, it utterly fails in its design. It raises ten thousand enemies for every victim it destroys. It is news to me, and I think it would be news to our troops, as well as to the troops of France and Russia, that German brutalities had inspired in them any 'terror.'

"War is, after all, a game, as is life itself. War is, no doubt, an 'iron game' and no child's play. The sowing of mines in neutral waters and the dropping of bombs indiscriminately on open towns are, however, outside the spirit if not the letter of all modern conventions, and the nation which employs these methods puts itself in the position of the anarchist who hurls his bomb among a crowd with the hope of perhaps killing the ruler he detests. Civilisation, for its very existence, must exterminate the force which 'fights' with such weapons. It is another of Germany's fatal blunders, the outcome of the short-sighted selfishness which has left her without a friend.—H. R."

[While agreeing entirely with the general spirit of this letter, it is necessary to point out that bombs have not been dropped on "open towns." Antwerp, Paris, Nancy, and so forth, are fortified places, and the towns behind the forts housed men and arms, as well as those controlling the armies. A bomb dropped legally on the Ministry of War may well miss its mark and strike a private house. Nevertheless, we must all agree that we must exterminate the forces against us.—Ed.]

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The Death of Richard Gates.

By the death of Richard T. Gates on the morning of September 14th, British aviation has sustained the greatest loss that has yet occurred through the death of an aviator, for his personal energy and ability have done more than those of any one man to spread among the people of this country a real appreciation of what flying means, and during his management of the London Aerodrome more capable pilots have been enabled to make a name for themselves than has been possible elsewhere in this country.

His death was the result of an accident on a Henri Farman biplane belonging to the Royal Naval Air Service, which he was flying in the dark on Thursday night of last week. In landing he was evidently unable to see the ground, and alighted at such an angle that the machine was completely wrecked and he was pitched far in front of it, striking with such force that the resultant internal injuries caused his death early on Monday morning.

Richard Gates was born at Brighton on March 7th, 1876. He learned to fly at Hendon, and took his certificate on a Howard Wright biplane on June 4th, 1912, the certificate being No. 225. During the South African War he served in a yeomanry regiment, and for good service he was given a commission, which he resigned at the termination of the war. On his return to England he engaged with considerable success in financial operations in the City, and in this way he came into contact with Mr. Grahame-White when an attempt was made to float "Grahame-White, Blériot, and Maxim, Ltd.," in 1911. Despite the failure of the flotation, Mr. Gates recognised the possibilities of aviation as a commercial proposition, and determined to devote his energies to its development.

He took over the management of the aerodrome at Hendon at a time when the idea of making such a venture a success looked altogether unreasonable, and he succeeded in making it one of the favourite resorts of pleasure-seekers in London from all parts of the world. The aerodrome was then only a couple of fields. More ground had to be bought from various occupants, it all had to be cleared, sheds had to be erected, and aeroplanes had to be built, yet Mr. Gates carried all the business through with absolute success. In the organisation of the aerodrome he was equally successful. He got together a little group of first-class pilots, he set up workshops with competent men in charge, he arranged the aerodrome on the lines of a race-course, he had it properly advertised, and he saw to it that the public drawn thither by the advertising received value for their money.

He himself learned to fly, so that it could never be said that he asked the pilots he employed to do anything he was afraid to do himself, and when new and strange machines were introduced he went up in them for the same reason. He flew as a pilot in the night-flying shows, and he looped the loop as a passenger with Mr. Hamel, with the same idea in view. As a natural result his pilots looked on him not merely as the man who paid their wages and gave them orders, but as one of themselves, and respected him accordingly.

In business Richard Gates was shrewd to the point of sharpness, but no one who has ever done business with him can ever say that he has not received a square deal, for Gates' word was his bond, and I would rather have had his verbal promise than any quantity of stamped paper from most people.

Like all men who are happily married, Gates held very broad view on the matrimonial laws. The strongly worded and logically argued pamphlets which he wrote when he held the post of Secretary to the Divorce Law Reform Association, might well lead some people to think that he was a revolutionary in such matters, or else that he was anxious to break away from his own home. As a matter of fact, he was singularly happy in his home life, having a wife who was devoted to him, and to whom he was equally devoted, and it was the natural consequence of his own happiness that his strong nature should wish to give to others who were less happy the freedom which would allow them to find happiness.



Richard Gates,—as we knew him.

As a friend, Richard Gates was as good a man as ever lived, and those of us who knew him well feel that one has gone from amongst us whose place can never be filled. For all his keenness in business he had the kindest of hearts, and he had an inimitable way of relating the simplest of daily happenings, which made life seem more cheerful after one had been with him for a while.

A few days before his death he had re-entered the King's Service as a flight-lieutenant in the Royal Naval Air Service, and, as such, he will be buried with Naval honours. His funeral takes place to-morrow (Thursday) at Hendon Parish Church, which overlooks the aerodrome he created.

The funeral leaves Colindale Avenue at 12 noon. No invitations to the ceremony are being sent out, and his friends are asked to accept this as the only intimation. Flowers may be addressed to the Aerodrome offices.

Richard Gates leaves a widow and two sons, one aged about ten, and the other only a few weeks. To them, in the loss of so devoted a husband and father everyone will offer their heartfelt sympathy. We who knew him well realise



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- Flying—Some Personal Experiences. By Gustav Hamel and C. C. Turner.
- Stability in Aviation. By G. H. Bryan, Sc.D., F.R.S. Price, 5s. net.
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that British aviation has lost one of its great pioneers, a strong man still in his prime, whose constructive and directive ability would have carried him to great successes as the world counts success. One can only hope that his young sons may grow up to be worthy of their father, and to be in some measure a consolation to their widowed mother in her irreparable loss.—C. G. G.

From the "Times" Newspaper.

Everyone will heartily agree with the Aeronautical Correspondent of the "Times," who writes:—

"With Mr. Gates disappears the most prominent figure in British aviation, and unquestionably one of its most popular personalities. It is not too much to say that Mr. Gates has played a more important part in the development of aviation in this country—with the brilliant results which the present campaign has already shown—than any other individual. Apart from controlling the aerodrome, which under him became the most perfectly appointed flying centre in the world, he to all intents and purposes created the sport of aviation in this country, and brought it to a pitch which has never yet been attained elsewhere."

Mr. Hamel's Death Assumed.

An application was made last week by Mr. T. Bucknill (instructed by Messrs. Oliver, Richards, and Parker), before Mr. Registrar Hardy, to presume the death of Mr. Gustav Hamel. From the affidavit of Alexis Longuet, a carpenter, living at Harelolot, near Boulogne, it appeared that at about 8.30 a.m. on Saturday, May 23rd, Mr. Gustav Hamel arrived at Harelolot from Paris on a new monoplane, which he had purchased in Paris, with the intention of crossing to Hendon. The day was foggy. Longuet, who had seen Mr. Hamel before at Harelolot, asked him if he was going to cross in such a fog. Mr. Hamel borrowed Longuet's binoculars and looked out to sea and said, "I shall be able to see from eight to ten kilometres, and prefer getting back to England at once."

Longuet helped Mr. Hamel to fill up with petrol and started his propeller, and Mr. Hamel, after circling round two or three times, disappeared in the direction of Calais, and has not been heard of since. From the affidavit of Joseph Le Prêtre, skipper of the fishing-smack "St. Helene," of Etaples, it appeared that on July 13th he saw a body floating on the water, from the pocket of which he recovered an aviator's map. The description of the clothing on the body tallied exactly with the description given by Longuet when he saw Mr. Hamel off. On this evidence the Registrar made an order to presume the death.

Paris in War Time.

(By THE AEROPLANE'S Special Correspondent, Mr. C. PHILLIPS VIERKE.)

Paris, September 4th.

There is a new game in Paris just now. The Parisians call it "La Chasse aux Bombes," but we should call it bomb-dodging. The hour that this pastime begins is just after tea-time, when what is left of the population of the city is about to take the evening "aperitif." For four days in succession one or more German aeroplanes have tranquilly sailed over the centre of the city, dropping light explosives and messages calling upon Paris to surrender. Except for slight injuries to a woman, little damage has been done by these assaults from the sky beyond the chipping off of a few bricks from one or two houses. But the amusement afforded to Parisians has fully compensated for the initial thrill of alarm caused by the appearance of the first "Taube" monoplane. There are no theatres open nowadays.

Yesterday I was an eye-witness on the Place de la Concorde of the exploits of the third aerial invader sent by the enemy. The place was alive with people who had come in the fond hope of seeing war in the air. The machine came into sight from the north-east, travelling at an altitude not exceeding 5,000 feet, going at a normal speed, and its pigeon-shape wings clearly distinguishable. The cry went up on every side: "C'est un Taube! C'est un Taube!" (We have been well educated in the distinctive features of wing design of French and German warplanes by the illustrated papers.) A moment or so later, two other aeroplanes appeared from different directions

at a great distance, but shortly afterwards they were seen to descend and vanish. It was at first believed that both these machines were French and would give chase to the enemy, but it now transpires that one of them was a German and was brought down.

In the meantime, the "Taube" over the centre of the city sailed majestically onward. Not the slightest suspicion of panic prevailed amongst the onlookers below. A few women and children ran hither and thither with the instinctive idea of getting out of range, most of the latter fairly shrieking with merriment. As the "Taube" crossed the Seine a sharp rattle of musketry rang out and then the regular explosion of a quick-firing gun. An unattached private took aim and fired on his own initiative. When he was stopped by a policeman a lady kissed him on both cheeks. We heard a sharp report different from the rest, and a big cloud of smoke told us that a bomb had been dropped in the neighbourhood of the Ministry of War. The next day we learnt that a house had been slightly damaged in the Rue St. Dominique. But the gallant aviator had reckoned without his host, for the War Minister had left Paris with his confrères the same morning for the new seat of the Government at Bordeaux.

The "Taube" circled gracefully, looking extremely pretty in the brilliant sunlight, re-crossed the Place de la Concorde and silently disappeared in the direction from which it had come. A large number of soldiers in motor-cars went in pursuit at a furious pace. It seems very doubtful whether any of the bullets directed at the "Taube" reached their mark. Quite a quantity of ammunition must have been wasted, because the firing was continuous for at least a quarter of an hour.

More people than ever assembled to-day in open spaces, hoping to see "the fun," but they were doomed to disappointment, except for those who mistook one of the several French machines deputed to patrol the city skies. Some half-dozen swift monoplanes were seen about in different districts on the look-out for more venturesome "Taubes." I am informed on good authority, however, that none of these machines has the speed of a "Taube," which is generally regarded by experts here as a very superior type. To-day's measures to deal with these aerial attacks are the first to prove their efficacy.

Parisians are regarding it as something approaching a scandal that German machines should have been allowed to reach the capital four days in succession. "Either the enemy is dangerously near, or our avions are not up to the mark!" is what everyone is saying. Of course, speed superiority of the German machine explains much. It is particularly galling that, just as the nation was congratulating itself upon the splendid search-lights that light up the heavens every night in search of aerial marauders, these gentlemen should see fit to pay their visits during the day.

What will happen if the Germans take it into their heads to build French types of aeroplanes and employ them in the present war? The French will certainly not fire upon them, because they apparently believe the enemy possesses nothing but pigeon-shaped wings.

We are expecting to hear the sound of guns in Paris at any minute. Up to yesterday the official Press Bureau has been telling us of Russian victories in East Prussia, and, as these have assumed greater importance and the silence with regard to the fighting a few miles from Paris has become more mysterious, the public has become more and more quietly pessimistic. Now that we see trenches being dug at the gates of the city and know that the Government has gone to Bordeaux, we are prepared for the worst. To-morrow I hand myself over, with another correspondent, to the tender mercies of the little Ford car that we have bought to run us about the country. Our first destination is Havre, whence these notes will be sent you by special messenger. There may be more to add to them en route. We would like to stay in Paris a little longer to see exactly what happens, but the risk of being bottled up in the city is too great. [Since when, things have happened.—Ed.]

A Good Example.

The British Petroleum Co., Ltd., have contributed £100 to the Red Cross Society and £100 to the Belgian Relief Fund. This is in addition to the £1,000 contributed to the Prince of Wales's Fund by the company.

Naval and Military Aeronautics.**GREAT BRITAIN.**

From the "London Gazette," September 8th, 1914:—

WAR OFFICE, SEPTEMBER 8th.—REGULAR FORCES:—

ROYAL FLYING CORPS (MILITARY WING).—Second Lieutenant Samuei P. Cockerell, Special Reserve, to be a flying officer. Dated August 28th, 1914.

MEMORANDA.—The undermentioned are granted temporary rank as stated. Dated September 9th, 1914:—

As Major: Lieut. (temporary Capt.) Clive M. Waterlow, Royal Engineers.

As Captains: Lieut. Thomas G. Hetherington, 18th (Queen Mary's Own) Hussars; Lieut. John N. Fletcher, Royal Engineers; Lieut. the Hon. John D. Boyle, the Rifle Brigade (the Prince Consort's Own); and Lieut. John D. Mackworth, the Queen's (Royal West Surrey Regiment).

SPECIAL RESERVE.—The undermentioned to be second lieutenant (on probation). Dated August 15th, 1914:—

Tom Garne, 4th Battalion Connaught Rangers.

A Supplement to the "Gazette" of September 8th, published on September 9th, contains the following military appointments:—

WAR OFFICE, SEPTEMBER 9th.—REGULAR FORCES:—

ROYAL FLYING CORPS (MILITARY WING).—Lieut. Thomas O'B. Hubbard, Special Reserve, is advanced from flying officer to flight commander, with the temporary rank of captain, on appointment to the Central Flying School as an instructor. Dated August 5th, 1914.

SPECIAL RESERVE OF OFFICERS:—

ROYAL FLYING CORPS (MILITARY WING).—The undermentioned second lieutenants to be lieutenants. Dated August 5th, 1914: Thomas O'B. Hubbard and Geoffrey de Havilland.

From the "London Gazette," September 11th:—

SPECIAL RESERVE OF OFFICERS:—

ROYAL FLYING CORPS (MILITARY WING).—The following to be Sec. Lieuts. (on probation): G. H. Eastwood (Sept. 10th); R. Chambers (Sept. 12th).

A Supplement to the "Gazette" of September 14th contains the following appointments:—

WAR OFFICE, SEPTEMBER 14th. REGULAR FORCES.

ROYAL FLYING CORPS. CENTRAL FLYING SCHOOL.—The following temporary appointment is made: Captain Tom I. Webb-Bowen, the Bedfordshire Regiment, an instructor, to be assistant commandant, and to be granted temporary rank of major whilst so employed. Dated August 7th, 1914.

SPECIAL RESERVE OF OFFICERS.

ROYAL FLYING CORPS (MILITARY WING).—Second Lieutenant Ronald L. Charteris to be lieutenant. Dated August 30th, 1914.

GENERAL RESERVE OF OFFICERS.

CAVALRY.—The undermentioned to be lieutenant: Dated September 15th, 1914: Henry de Grey Warter, late lieutenant 4th (Royal Irish) Dragoon Guards.

NAVAL.

The following appointment was notified by the Admiralty on September 11th:—

ROYAL NAVAL AIR SERVICE.—G. H. B. Hartford has been appointed Probationary Flight Sub-Lieutenant and appointed to the "Pembroke," additional, for Farnborough Naval Air Station, to date September 7th.

The following appointments are announced by the Admiralty:—

ROYAL NAVAL AIR SERVICE.—Messrs. B. W. Hart, J. O. Groves, and B. O. Ifield have been appointed Probationary Flight Sub-Lieuts., and appointed to the "Pembroke," additional, for course of instruction, at Hendon, to date September 7th. R. E. Nicoll has been appointed Probationary Flight Sub-Lieut., and appointed to the "Pembroke," additional, for the Central Flying School, to date September 7th.

The following promotion was notified by the Admiralty on September 12th:—

Acting Commander C. R. Samson has been promoted to the rank of commander, with seniority, September 11th.

The following appointment was made at the Admiralty on Saturday:—

Mr. A. Cornelius has been entered as probationary flight sub-lieutenant and appointed to the "Pembroke," additional, for the Central Flying School, to date September 10th.

The following appointments were announced by the Admiralty on September 14th:—

ROYAL NAVAL AIR SERVICE.—C. H. Butler has been entered as Flight Lieut. for temporary service, and appointed to the Pembroke, additional, for Central Flying School, to date September 11th.

The following have been entered as Probationary Flight Sub-Lieutenants, and appointed as follows:—B. Tomlinson, to the Pembroke, for service in Naval Airship Section, to date September 8th; E. R. Moon, to the Pembroke, additional, for Hendon Air Station; G. C. Colmore and C. G. Verner, both to the Pembroke, additional, for course of instruction at Farnborough Naval Airship Station; R. P. Cannon, to the Pembroke, additional, for Central Flying School, all to date September 11th; P. B. Murray, to the Pembroke, additional, for Central Flying School, and G. M. Dyott, to the Pembroke, additional, for Calshot Naval Air Station, both to date September 12th, all for temporary service; K. S. Savory, A. E. Griffin, M. S. Marshall, H. F. Hall, and D. K. Johnston, all to the Pembroke, additional, for Central Flying School, to date September 1st.

* * *

Commander Samson, whose promotion from Acting Commander is noted, will be remembered as one of the first three Naval officers to fly officially, these officers being trained on Short biplanes lent to the Admiralty by Mr. Frank McClean, now a Flight-Lieutenant, R.N. Commander Samson is admitted to be one of the finest fliers in the Navy, and he has done much distinguished work both over land and sea. It will be remembered that a photograph of him taken on service in Belgium was published recently.

Mr. G. C. Colmore, appointed to Farnborough for Naval Airships, is one of the earliest of British aviators, his certificate being No. 15, dated June 21st, 1910. He took his certificate at Eastchurch on a Short biplane with a Green engine, after exactly 20 minutes' practice, the total time from his first sitting in an aeroplane till he became a certificated aviator being about 45 consecutive minutes. He flew at the Lanark Meeting of 1910, and was also at Bournemouth. He is a clever engineer, and is a notably skilful car driver.

Mr. G. M. Dyott, appointed to Calshot, is well known as a clever pilot, designer, and constructor. He flew in Mexico in 1912, and has since flown remarkably well on the neat little monoplane built to his design by the Hewlett and Blondeau firm.

From the "Gazette" published above it will be seen that various military officers who went over to the Naval Air Service with the Army airships have been given a step in rank. Major Waterlow, R.E., was one of the first officers to take to airship work seriously, and has acquired a more than British reputation as an authority on his subject. One had hopes that his ideas on airship design would be developed now that the Navy had taken charge of this particular branch, and one still hopes that much may be done in this way when the war is over.

Capt. Hetherington was one of the finest horsemen in the British Army and has represented our Service in many important competitions abroad, notably in Spain and America, but owing to an accident he had to give up riding of the kind in which he formerly specialised. Some three years ago he took to flying and gave promise of being a brilliant pilot, and afterwards he took to airships. He is also one of the best motor-car drivers in the Service, and possesses much ability as a practical engineer.

Capt. Fletcher has considerable scientific attainments and has contributed much to the excellent work the small airships have done, despite the poorness of the material with which the personnel has had to work.

Capt. the Hon. John D. Boyle is a younger brother of the Hon. Alan Boyle, who was badly smashed in an aeroplane

accident at the Bournemouth meeting of 1910. Capt. Boyle also did a considerable amount of flying before taking to airship work.

Capt. Mackworth has for some time been acting as Adjutant to the Royal Flying Corps, while Capt. Barrington-Kennett has been employed on other duties.

* * *

Several people whose names are well known in aviation have recently been appointed to the Royal Naval Air Service. Mr. A. C. Burgoine, who has contributed many excellent practical articles to this paper, and who was the representative of THE AEROPLANE at the Monaco Rallye this year, and Mr. C. W. Fidoock, formerly of Vickers, Ltd., and more recently of the Grahame-White Co., who has in the past also written and done drawings for THE AEROPLANE, have both been appointed in charge of stores, and with them is Mr. Sanders, formerly a master-mariner in the Merchant Service, who will be remembered as the maker of the Sanders aeroplane on which the late Lieut. Parke, R.N., did some flying.

Mr. Stronach, formerly connected with the Bristol Co., and an exceptionally capable hand at tuning engines, has been appointed Sub-Lieutenant in the Royal Naval Volunteer Reserve, and is assisting the Royal Naval Air Service with engine work.

Among the many well-known pilots who have joined the Royal Naval Air Service is Mr. Norman Howarth, who, prior to the outbreak of war, did much good work as one of the instructors at the Grahame-White School at Hendon. Mr. Howarth offered his services to the Navy, and was appointed Petty-Officer Pilot, at the Royal Naval Flying School at Eastchurch, where his abilities should be of high value.

* * *

The long arm of coincidence is really behaving unreasonably, if fortunately, in the present war. We have already heard of the destroyer's boat's crew who, having been abandoned by their ship off Heligoland, were picked up in a fog by a submarine and brought safely home, and we have heard of the German seaplane which, after being afloat in the North Sea for twenty hours, was likewise picked up by a British submarine, and now one learns of an equally unlikely stroke of luck to a certain popular Captain of Marines who is a Flight-Commander in the Naval Air Service. Having gone out far into the wide part of the North Sea on patrol duty, his engine stopped and he came down into a very lumpy sea. The landing was perfect, but the machine was so pitched about that he and his passenger had to climb out on the floats to try and steady her. Nevertheless, the rolling continued to such an extent that the machine steadily proceeded to disintegrate. At the end of a couple of hours things were beginning to look

serious, and the machine was rapidly approaching a state of decrepitude in which even the floats threatened to part company from the rest. Just as the crew had made up their minds that they were going under, a British destroyer hove up out of the mist, her radius of vision being not more than 50 yards, and picked up the pair of them and took them safely back to their base a comparatively short time after their ordinary patrol period would have elapsed.

* * *

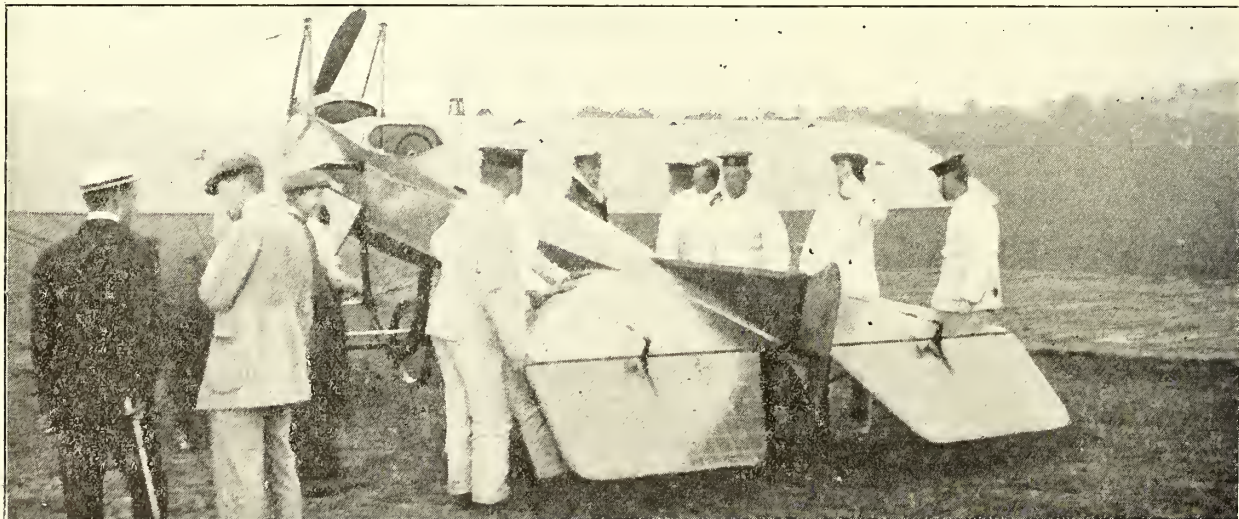
On Tuesday night of last week, about 8.30 p.m., there was one of the usual scareship rumours at Hendon, and in a remarkably short time an 80-h.p. Henri Farman, piloted by Flight-Commander Grahame-White, with Flight-Lieut. Richard Gates in charge of the artillery, went up to investigate. Two Zeppelins were reported to have flown over Brixton. Why Brixton should have been chosen in particular is hard to understand, unless, of course, it was in order to confer with German proprietors of performing dogs, and other music-hall artistes indigenous to the neighbourhood. However, nothing was visible in the sky, and such of the King's armed forces as were within sight of the aeroplane refrained from molesting it, the only bombardment apparent being an excellent display of shooting-stars. Pilot and passenger both seemed to be chiefly impressed by the extreme beauty of London as seen from above at night. Having so often seen the lights of London at an angle, they appreciated their Service exemption from Mr. McKenna's prohibition, and treated themselves to a thoroughly perpendicular plan view of the metropolis.

Incidentally, with the advent of the naval aviators at Hendon, and the extraordinary activity of all the schools, the amount of flying done is greater than even in the palmiest days of the aerodrome, and, as the public are still admitted to the enclosures, those readers of this paper who have not been called up for service will find much to interest them at Hendon on fine afternoons and evenings.

The "Chronicle" of September 9th reports that an aeroplane passing over Kensal Rise on September 8th, about 8.30 p.m., caused some alarm. It carried no lights. It seemed to pass from south-west to north. This was evidently the R.N.A.S. Henri Farman from Hendon, with Flight-Commander Grahame-White and Flight-Lieut. Gates on board.

* * *

A considerable amount of flying has been done during the past week at Eastchurch, chiefly of an instructional nature. Among the machines in use one noticed Short tractors and pushers, Vickers gun-carrying biplanes, Bristol tractors, a Bristol and Sopwith scout, so evidently plenty of experience is being acquired. Short seaplanes in numbers are still being delivered to the Navy.



AT HENDON.—Squadron-Commander Porte, R.N. (standing by the right wing), and his crew of Marines, with his favourite Deperdussin monoplane (100-h.p. Anzani). On the extreme left, Lieut. Tower, of the United States Navy, extra Naval Attaché at the U.S. Embassy, talking to Mr. Whittaker.

Less flying has been done this week in the Southampton District owing to the bad weather. A new biplane from the Eastbourne Aviation Co. was flying on Monday in splendid fashion. On the same day a Henri Farman did a lot of hard work. A Sopwith tractor was also at work on Monday, also a bat-boat—which seems to be a wonderful machine. Wight and Henri Farman "pushers" and Avros were all about. On Sunday an Avro "pusher" was out and appeared to be flying much better. The new Sopwith twin-float "pusher" made a splendid test flight from Woolston on Friday. Yet another Sopwith bat-boat is now said to be ready for trials. There appears to be a daily aerial service between Southampton and Salisbury Plain and Farnborough, and many machines are being shipped from the docks.

* * *

At 12.35 a.m. on September 15th, the Press Bureau issued the following statement:—

The Secretary of the Admiralty announces that the gales have been so strong that it has become necessary to deflate the airship "Eta."

MILITARY.

The Official Press Bureau issued the following on September 14th:—

Quite one of the features of the campaign, on our side, has been the success attained by the Royal Flying Corps. In regard to the collection of information it is impossible either to award too much praise to our aviators for the way they have carried out their duties or to over-estimate the value of the intelligence collected, more especially during the recent advance. In due course certain examples of what has been effected may be specified and the far-reaching nature of the results fully explained, but that time has not yet arrived. That the services of our Flying Corps, which has really been on trial, are fully appreciated by our Allies is shown by the following message from the Commander-in-Chief of the French Armies, received on the night of September 9th by Field-Marshal Sir John French:—

"Please express most particularly to Marshal French my thanks for services rendered on every day by the English Flying Corps. The precision, exactitude, and regularity of the news brought in by its members are evidence of their perfect organisation and also of the perfect training of pilots and observers."

To give a rough idea of the amount of work carried out, it is sufficient to mention that, during a period of twenty days up to the 10th September, a daily average of more than nine reconnaissance flights of over 100 miles each has been maintained.

The constant object of our aviators has been to effect the accurate location of the enemy's forces, and, incidentally—since the operations cover so large an area—of our own units. Nevertheless, the tactics adopted for dealing with hostile aircraft are to attack them instantly with one or more British machines. This has been so far successful that in five cases German pilots or observers have been shot in the air and their machines brought to the ground. As a consequence, the British Flying Corps has succeeded in establishing an individual ascendancy which is as serviceable to us as it is damaging to the enemy. How far it is due to this cause it is not possible at present to ascertain definitely, but the fact remains that the enemy have recently become much less enterprising in their flights. Something in the direction of the mastery of the air has already been gained.

In pursuance of the principle that the main object of military aviators is the collection of information, bomb-dropping has not been indulged in to any great extent. On one occasion a petrol bomb was successfully exploded in a German bivouac at night, while, from a diary found on a dead German cavalry soldier, it has been discovered that a high-explosive bomb thrown at a cavalry column from one of our aeroplanes struck an ammunition wagon. The resulting explosion killed fifteen of the enemy.

[It should be particularly noted that this is not a Headquarters Dispatch, but is a note compiled by the Press Bureau from various sources.—Ed.]

Major T. I. Webb-Bowen, whose appointment to Assistant Commandant, Central Flying School, is Gazetted, has been for a considerable time an instructor at that establishment and in charge of workshops. He is one of the most highly esteemed officers in the Royal Flying Corps, and possesses the enviable gift of being able to impart knowledge to those under his instruction in a manner which makes learning a pleasure.

Capt. T. O'B. Hubbard, whose promotion is notified, will be remembered as the secretary for a number of years to the Aeronautical Society, in which capacity he did a great amount of valuable work, placing the Society in a position of considerably greater eminence than it had ever previously attained. He is also the joint author with Mr. John Ledebøer, B.A., of several valuable works on aviation. He learnt to fly at his own expense at the Grahame-White School, and thereafter was given a commission in the Royal Flying Corps, where he has been employed on a great deal of interesting and valuable experimental work. Not only has this work been carried out with intelligence, but Capt. Hubbard proved himself to be a pilot of more than ordinary skill, and his appointment as instructor at the Central Flying School is likely to produce excellent results.

Mr. Geoffrey de Havilland, whose promotion is also gazetted, is the designer of the original B.E.2, a machine which astonished everyone by her efficiency when she was first produced. The fact that the Royal Aircraft Factory staff has been unable to improve materially on the original design for something like three years, and that machines of similar type, which are merely elaborated in detail without having their efficiency improved thereby, are still being ordered in large quantities by the War Office, shows how excellent his ideas were then. Since then Mr. de Havilland has joined the staff of the Aircraft Manufacturing Co., and in the meantime has acquired many new ideas, so that one hopes to see him ere long produce a really up-to-date machine.

Mr. Ronald Charteris, promoted to Lieutenant, is managing director of the All British Engine Co. He gave promise of being a pilot of considerable merit when in process of taking his certificate, and he formerly commanded a squadron of Yeomanry which he brought to a high state of efficiency.

Mr. Henry de Grey Warter will be remembered as a pupil at the Bristol School at Brooklands. He was afterwards appointed on probation to the Royal Flying Corps, but did not continue his career as an aviator.

Mr. Tom Garne, whose appointment as 2nd Lieut., on probation, to the 4th Battalion, the Connaught Rangers, is notified, will be remembered as among the earlier pilots at Brooklands, where he flew Deperdussin monoplanes and eventually took his certificate on a Bristol biplane. Since then he has done little flying, though he was working on a highly original machine in the north of Ireland during the early part of this year.

* * *

Among a recent batch of wounded officers who have returned from the front is Mr. Gordon Bell, who, fortunately, escaped with a very slight wound in the knee. One learns indirectly that he was flying a very fast tractor biplane, and that besides being slightly wounded himself, a shot stopped the engine while he was over very bad country, so that he alighted in a tree, being pitched out of the machine but escaping with only a somewhat severe shaking. The reports that he was seriously wounded in several places are untrue, as he is able to drive a car. One assumes, as he was able to get back without being captured, that he was fired on by our own troops or by the French.

* * *

A report has been received at Warwick that Capt. Robin Grey, Royal Flying Corps and Warwickshire Horse Artillery, has been decorated with the Legion of Honour for distinguished services in the field. One hopes that the report is true, as Captain Grey has earned the esteem of all with whom he has come in contact since he joined the R.F.C.

* * *

The "Daily Sketch" published on Tuesday a somewhat improbable story of the smashing up of a German aeroplane by Lieut. Norman Spratt, R.F.C. The tale is that Mr. Spratt chased the German, who signalled his intention to surrender and proceeded to descend. When close to the ground and

thinking his pursuer was alighting, he started up again, but Mr. Spratt, who was close behind, opened out his engine and "pancaked" on top of the German's machine, both pilots being somewhat damaged. No doubt Mr. Spratt did bring the German down, but it looks as if the truth was that he collided with him in landing. Mr. Spratt will be remembered as the unofficial holder of the British height record.

FRANCE.

A letter from a mutual friend states that M. Verrier has been busy in the defence of Paris lately, and has done a good deal of night flying. He was, in fact, the first French pilot to be involved in a battle with a German machine. He was flying over a certain district, which must be nameless, at a height of 2,000 metres, when a German aeroplane appeared. M. Verrier's passenger fired at the German with the mitrailleur fitted to the machine, and they saw that parts of the German planes were hit, but, unfortunately, though luckily for the German, the mitrailleur jammed after firing a few shots. In this same letter, which is dated September 7th, it is said that M. Verrier and the other French pilots in his escadrille expected to be sent to join in the pursuit of the Germans, so that evidently the German defeat was a foregone conclusion as early as that date.

Considerable anxiety is felt among the aviators at Saint Cyr about the fate of M. Chevillard, who was dispatched to Chalons on or about September 1st, and had not been heard of up to the 7th. Chalons, of course, has since been occupied by the Germans, and, presumably, by this time retaken by the French, and one hopes that M. Chevillard is at worst a prisoner of war.

It may have been noticed that during the past fortnight nothing whatever has been heard of the French airships. One learns on good authority from an Englishman who has recently returned from Paris that three of the French airships have been brought down by the fire of the French troops, who were unable to distinguish between French and German airships. It is also said that quite a number of French aeroplanes have been shot down by French troops. Evidently the average officer in France, as well as in England, still requires much education in aeronautical matters.

A Zouave officer related to the "Chronicle" correspondent how—"In a village named Penchard there was some very sharp fighting, and some of our artillery were posted hereabouts. Presently a German aeroplane came overhead encircling round in reconnaissance. But it was out for more than that. Suddenly it began to drop bombs, and whether by design or otherwise—they have no manners, these fellows—they exploded in the middle of a field hospital. One of my friends, a young doctor, was wounded in the left arm by a bullet from one of these bombs, but I don't know what other casualties there were. But the inevitable happened.

"Shortly after the disappearance of the aeroplane the German shells searched the position, and found it with unpleasant accuracy."

[A good many correspondents would have hailed this as German barbarism. The "Chronicle" man does not embroider his stories, and he leaves it to his readers' good sense to see that in this case a bad shot for the artillery position by the German aviator drew the fire of the guns onto the field hospital, the guns naturally firing at the place marked by the bomb.—Ed.]

The correspondent of the "Telegraph" in France describing a journey behind the fighting line, says:—"... a few hundred yards farther on we find ourselves in the repairing camp of —, where are not only French aviators, but a strong detachment of our own flying corps. Finer-looking men than these latter I have never seen. Well set up and tanned to a deep bronze, our British airmen (sic) are the personification of soldierly efficiency grafted on British physique. In command is —, who holds the English record for long-distance, and he may well be proud of his corps.—[The reference is evidently to Major Longcroft, who has, one hears from a reliable source, distinguished himself highly.—Ed.] We exchange greetings all round, have a hasty glance through the camp, and are regaled with accounts of German bomb-throwing at our headquarters at Compiègne, and of the superiority of our aircraft

and its navigators over any others—which we can well believe."—[This account of the welfare of the R.F.C. will be welcome news to all those connected with the Corps. The final touch is perhaps to be ascribed to journalistic fervour, for though many of our aircraft are faster than the average German machine in speed and climbing power, the fact remains that the best German machines have greater climbing capability, greater staying power, and better engines, and are better able to stand rough use than our own military machines.—Ed.]

It is reported from Troyes that a German aeroplane flew over the town on the 11th and dropped several bombs, but nobody was injured. A French aeroplane chased the German, and managed to bring it down after a pursuit of several miles. The pilot and observer were killed.

A private of the Royal West Kent Regiment reports that he saw a duel between French and German aeroplanes, near Mons. He said:—

"It was wonderful to see the Frenchman manoeuvre to get the upper position. After ten minutes or about a quarter of an hour he was on top, and blazed away at the German with a revolver. He injured his opponent so much as to cause him to descend, and when the German was found he was dead. The British troops buried the aviator and burnt the aeroplane."

A picture in the "Express" of September 10th shows French soldiers guarding an aeroplane at Belfort. The machine is obviously a German, and appears to be an L.V.G., which would indicate that the French have captured intact at least one useful German machine.

It is reported that a German aeroplane flew over the town of Nancy on September 8th, and dropped a bomb in the Place de la Cathédrale. Nobody was injured, but the windows of many houses were broken.

It is reported from Paris on September 8th by the Special Correspondent of the "Morning Post" that a French biplane, piloted by a lieutenant and carrying a military observer, fell at about 4.30 p.m. in the Bois de Vincennes. Both the pilot and his passenger were killed on the spot. There was an explosion as the machine reached the ground; four people were killed and four severely injured, while several others were slightly hurt.

The "Morning Post" reports that among the German prisoners sent to Cholet on September 9th were two lieutenant aviators who flew over Paris and dropped bombs. The pilot is one of the best German military aviators, and is a "height record" man. The observer was recognised at Le Bourget Station by a Reservist. Before the war broke out he was an accountant in a silk merchant's firm in the Rue du Sentier. He left Paris on the eve of the mobilisation. The population of Le Bourget tried to lynch him. Both aviators were captured at Orry la Ville, where they had been compelled to land owing to a breakdown of the engine.

GERMANY.

A daily paper which shall be nameless reports: "German aeroplanes constantly hovered over the army at an unattainable height, giving information of its position to the enemy, who were thereby enabled accurately to gauge the range at eight miles." Aeroplanes which reach unattainable heights should be very valuable to the German army, but it seems a pity that their accuracy in gauging ranges should be fixed at eight miles.

Mr. E. Rowan, of the "Daily Chronicle," reports from Amsterdam on September 8th that forty new Zeppelins are said to be now ready for service, and they embody many new features, the result of recent experience. [Holland is notoriously pro-German, and is quite capable of concocting stories worthy of the German Press Bureau. It must be remembered that Zeppelins can only be built in specially constructed sheds, which take months to build, and that the airship itself takes nine months to build. The greatest possible acceleration could not reduce the time below five months, for the simple reason that four men cannot drive one nail any quicker than one man can do it. Also, Zeppelins have done so little useful work that Germany is not likely to devote men to them who could be better employed on making aeroplanes.—Ed.]

The "Central News" correspondent at Copenhagen reported on September 7th that it is learned from Berlin that one of

the largest German aeroplane factories, which prior to the war was situated at Mulhausen, has now been moved to some unknown site far on the other side of the Rhine. The factory has a normal capacity of three completed aeroplanes per fortnight. [This factory, judging from its output of machines, must be of comparatively small size, for most British factories of any importance exceed this output. On the other hand, the output may have been deliberately misstated. Presumably, the reference is to the Aviatik Works.—Ed.]

Another Reuter-cum-Amsterdam message reports that: "The German military aviator Count Uxkull, who was well known for his flight from Doberitz, Vienna, and Budapest, recently fell to the ground while reconnoitring, and has succumbed to his injuries. Flying-Instructor Breton was killed at the same time." [Despite a fair working knowledge of Germany's better known aviators one fails to recognise even a likeness to a known name in these posthumously famous pilots.—Ed.]

It was reported from Antwerp on September 10th that the German Emperor and the General Staff were then in Luxemburg, where Uhlans were encamped in 700 tents. The General Staff was quartered in the house of the German Legation.

During the night the Legation was guarded by aeroplanes, which pierced the darkness with searchlights to prevent any hostile aeroplane from approaching the town. A Belgian and a French aeroplane, however, succeeded in dropping four bombs, but without doing serious damage. [This is another Reuter story, and one would like to have further confirmation.—Ed.]

RUSSIA.

A report in the "Times" of September 10th states that the wife of a Russian aviator received a letter from her husband telling her that during his flights he had been able to observe every detail of Russo-Austrian engagements, noting particularly the determination with which the Russians attacked, invariably throwing the enemy into confusion. Generally speaking, the work of Russian aviators has yielded valuable results.

An aeroplane duel is reported from the Austrian front. After a successful reconnaissance the aviator, Capt. Nesteroff, seeing an Austrian aeroplane over the Russian forces, at once set out to prevent it from dropping bombs. Capt. Nesteroff, at the peril of his life, charged straight at the enemy's aeroplane, which was destroyed by the impact. Both aviators were killed. Capt. Nesteroff was the first aviator to loop the loop in Russia.

[This story is another of the yarns published by "Reuter's," who also circulated the story of M. Garros having rammed an airship and of Herr Hirth being shot as a spy. Presumably, Capt. Nesteroff, who was, in fact, the first aviator in the world to loop the loop, was the only Russian pilot whose name was known to Baron de Reuter's firm, so it was necessary to find some story about him also. Capt. Nesteroff is a singularly brainy flier, and probably knows that he is worth more alive than the value to be obtained by wiping out a single German machine.—Ed.]

The Petrograd correspondent of the "Morning Post" reports as follows on September 13th:—

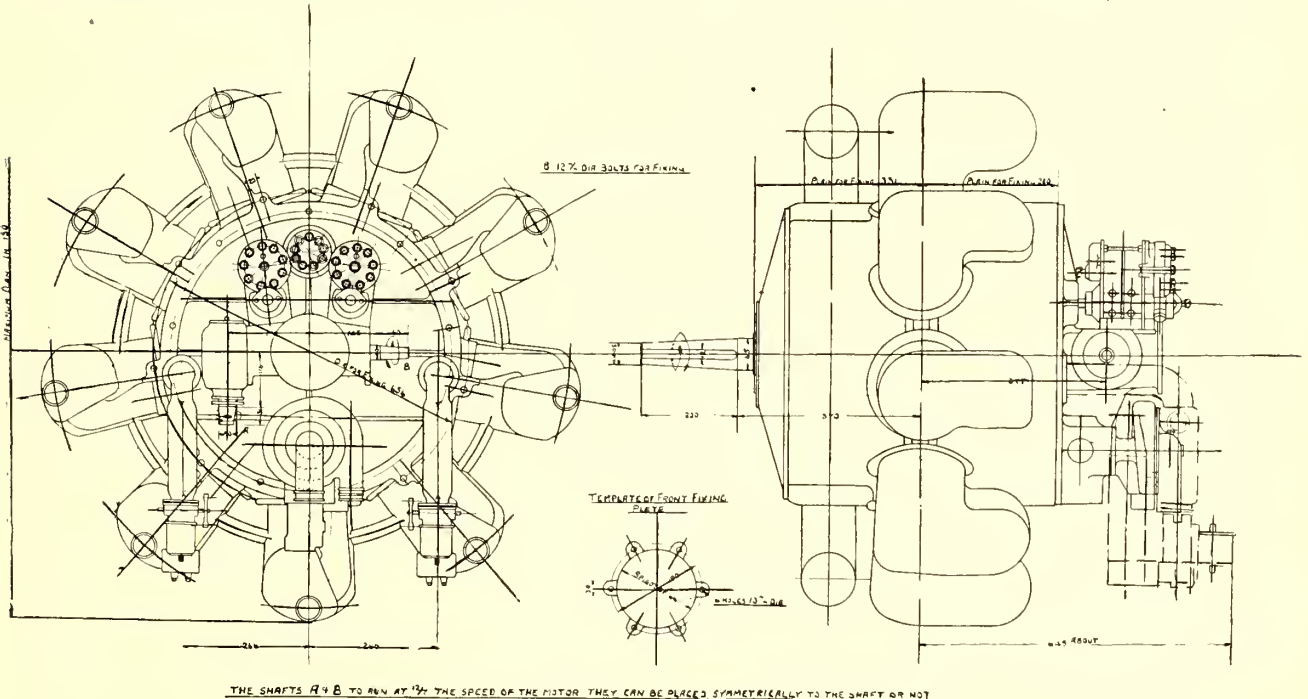
One of the most important points about the Russian conquest of Galicia is the fact that Germany is now completely deprived of her sources of supply as regards petroleum and naphtha products, almost the entire yield of Galicia having been annually taken by Germany. As the Germans are waging this war mainly on a mechanical basis, this loss of motive power for motor-cars, aeroplanes, and airships must tell heavily on their effectiveness.

When Germany's mechanical inventions for the comfortable destruction of her foes give out, it will be time to see what kind of soldiers are really bred by German militarism. The Russians have little respect for mechanical warfare. Eye-witnesses of the Zeppelin bombs, so freely used about Soldau, report that these huge explosives make a funnel in the ground 35 feet in diameter, showing their appalling power, but that, on the other hand, they rarely hit any mark on the battlefield which would be worthy of such costly efforts. Their mere noise no longer scares the Russian soldier.

A couple of days ago someone started a rumour that a Zeppelin had been seen over Petrograd. I could not discover the slightest grounds for the statement, but it was interesting to note the attitude of the Russians. We have read about bombs being dropped in Paris and elsewhere, but everybody I met seemed to regard the rumour as a rather welcome sign that something might yet happen here that would unite the stay-at-home people in sympathy with their soldiers. Plenty of people went out every night to see the mythical engine of destruction.

BELGIUM.

From the diary of a resident at Brussels, printed in the "Telegraph" of September 10th.—Sept. 4th. A German



ARRANGEMENT OF AEROPLANE ENGINE, TYPE ODS

Details of a 300-h.p. unit of the 600-h.p. Salmson engine illustrated last week.

"Taube" aeroplane flew over the town in the early hours of the morning. In the course of its journey it caught fire and fell into the middle of the Boulevard Militaire. The officer driving it got out, and staggered to his feet, but the next second coughed up much blood and dropped dead.—[Evidently the result of concussion against the front of the machine.—Ed.]

The special correspondent of the "Times" at Antwerp reports that on September 8th the situation remained excellent. "The report is confirmed that the airmen Petrowsky and Baincellin seriously damaged a German airship of the Parseval type near Baesrode, exploding four bombs and dropping several bundles of darts, which pierced the envelope of the airship. They also dropped several bombs on the German Staff headquarters near Vilvorde. Eventually the airmen discovered the enemy near Lebbeke and dropped bombs and darts with startling results, the enemy dispersing in all directions."

[The above report is typical of the ineptitude of the average newspaper correspondent and editor. How a bomb (exploded) could pierce the single gas-bag of a Parseval and only inflict "serious damage" requires considerable explanation. Total destruction would appear to be the inevitable result.—Ed.]

Mr. René H. Feibelman, of the "Express," reports from Rotterdam, on September 8th, that a Dutchman from Aix-la-Chapelle gave him the following account of a fight a few days before between British, French, and German aeroplanes, as told to him by the German flying-officer:—

"After the battle of Mons I was reconnoitring in the northern district of France, near Lille and Maubeuge. I left Belgium in my Taube biplane with a mechanic. While I was flying into France I heard a noise of an aeroplane, which I soon recognised as a British military Bristol biplane, which had come to fight us. Our first tactics were to prevent the Bristol climbing higher than us, but the British machine was cleverly handled, and soon was 150 yards over us. Several attempts were made by us to fly higher, but the British aeroplane checked them all. It was evident that each of us feared that the other would drop bombs on him.

"Meanwhile, we had turned northward, hoping to reach the German camp before the Englishman damaged us or forced us to land. The Bristol was coming closer and closer, and we felt like a bird on which a vulture was going to pounce. I said to my mechanic: 'I think our last hour has come.' He answered with a laugh: 'Rather our last half-hour.' I am sure that if the Englishman had any bombs aboard I would not be here to tell the tale, but fortunately he had none. He could not have missed us, as owing to his clever steering he was about fifty yards over us. These were terrible minutes. We fired our revolvers at the enemy, and he responded vigorously. Our machine was hit several times, but not in vital parts. The wings show many bullet-holes.

"We were nearing the Belgian boundary when I saw a small Blériot monoplane come to the aid of the Bristol. The French aircraft reached 1,000 feet in no time, and then began flying in circles around us, always drawing nearer. Our ammunition was nearly exhausted when we heard energetic firing beneath. We had reached a German camp, where our terrible situation was speedily realised, and our soldiers were firing on the two enemy flying machines in order to cover our retreat and descent. Needless to say, I did no reconnoitring that day."

[One hesitates to believe that the German aviator could hear his opponent's machine, unless he were gliding with his motor stopped. The British machine was presumably a B.E. or an Avro, as there are no Bristol biplanes in use in the Army. Though there are a number of B.E.s built by the Bristol Co., to Royal Aircraft Factory designs, they could not be distinguished from any others of similar design—at any rate, in the air. A "Taube biplane" is another impossibility, for a "Taube" is specifically a monoplane with bird-shaped wings, hence the name, which means "pigeon." A biplane pigeon has yet to be produced. It also seems strange that the German troops should fire at a knot of assorted aeroplanes.—Ed.]

CHINA.

The "Chronicle" of September 9th reports that Japanese aviators had again been sent up to drop bombs on Tsingtau (Germany's fortified settlement in China). Seaplanes were used.

HOLLAND.

A Zeppelin was sighted flying over the island of Borkum on the afternoons of Sept. 10th and 11th. Borkum is the most western of the German Frisian Islands, and is the nearest point of Germany to England.

FROM DENMARK.

The Copenhagen correspondent of THE AEROPLANE writes as follows:—

At Vienna a branch of the Albatross aircraft factory has been opened; the works span over 10,000 square metres. Three or four aeroplanes, either the well-known land or water-planes, can be produced every week, and the director is Rudolf Wiener, the brother of the founder and director of the German works at Johannisthal.

The director of the Aviatik and Autocar, Ltd., in Mülhausen, has been a victim of the fights there between the Germans and the French. A shell hit the villa, where Châtel dwelled with his family in the neighbourhood of the factory, and killed Georg Châtel and his wife. Director G. Châtel was a former well-known auto race driver. [Can this be M. Châtel who was formerly manager of the Tellier school at Etampes?—Ed.]

A German aviator who dropped bombs during the night over Namur used himself of a strategem. When in the air he let hang down from the aeroplane a rope of 600 feet length with a little red lantern to the end. Thus the Belgians kept shooting after the red light, and when the aviator had finished the bomb dropping he let go the rope and returned safe.

In addition of the word-painting of the Zeppelin over Antwerpen of yesterday, the following from the Danish Captain Lindberg, whose s.s. "Minsk" has just arrived from Antwerpen, may be of interest:—"It was Tuesday evening, when the whole city was startled by mighty fuses. The glasses splintered and all the people hurried to the windows. The Zeppelin went over the city and dropped three bombs, and next morning we saw the results. I had my office in Staatsveg, and a bomb had fallen in that street. All the glasses in the houses had gone, four policemen, standing on the corner, were killed, and a lady looking out of the window lost her head and one arm. Further, four persons were wounded and died all in the hospital. One bomb fell in Venus Street, where the Danish Consul-General Yvel Brockdorf dwells, and bored itself several feet in the earth, slinging the plasters against the houses. Here, too, all glasses splintered, and some old houses fell down. All in all three persons were killed, that is one for every bomb. After this surprise from the air it was announced that no lights should be lighted. Patrols went noiselessly in the streets the whole night, and great were the penalty for trespassers who even lighted."

Pegoud flew with the Artillery Flying Officer Monterme over the enemy and dropped fire flambeau bombs, and it was on this occasion that he succeeded in destroying two big convoys with 42 mm. projectiles. Too, the aeroplane carried guns for the case that they should be compelled to land and defend themselves. Luckily they were able to reach Paris again, though the Blériot was bored through by 93 bullets.

Every day the Danish Naval and Army flying officers exercise with the Leveque flying-boats and the Farman and Caudron biplanes. An accident took place the other day, when Lieut. Grut fell from 40 ft. when the 50-h.p. le Rhone motor suddenly stopped. The tail of the Caudron biplane was smashed but has now been repaired.

The German airship Zeppelin L3 appeared over the North Sea outside Esbjerg and was seen by the inhabitants, even by the schoolboys, who got an extra holiday. The L3 disappeared in the direction of Heligoland.—Ht.

Pilots' Photographs.

The photographs of the various officers of the Royal Naval Air Service stationed at Hendon, which appeared in THE AEROPLANE last week, were taken by Mr. F. N. Birkett, 97, Percy Road, Shepherd's Bush, London, W., and copies of them in any size can be obtained from him. Mr. Birkett has undoubtedly the largest collection of portraits of aviators in this country. The list includes Naval, Military, and civilian aviators, both those famous and those as yet unknown, and all of them are remarkable for the excellence of the likenesses.

Materials of Construction: Some Notes on Timber.

(CONTINUED.) BY A. C. BURGOINE.

The letters in Fig. 3 refer to materials as below, with the weights per cubic foot in parentheses as before.

H.—Kauri pine, seasoned in plank and also about a year in boards. (40).

I.—Specially clean and dry yellow deal—"firsts"—cut from floorboards. (32).

J.—Bone-dry English oak, specially clean stuff, and tested with the year-mark grain across the line of load. (46).

K.—Ditto, adjacent cuts, but tested with grain in line with load.

L.—English oak, mild and straight grain as selected for steam-bending, freshly cut in the autumn and before the sap was down. (43).

The Kauri pine, H, is about as strong as teak at its yield point, and appreciably stronger than mahogany. It deflects more than pitch pine, and is much inferior to ash in all respects—as, indeed, are all the others. Kauri springs nice and fair, and its closeness of texture and fairly hard surface render it much superior to such stuff as spruce for jobs where nails have to be clenched through it—as in float-building. Like most close-grained woods it is rather heavy, but this may frequently be atoned for by its virtues, and a slightly smaller scantling used to keep the weight down. Of all the woods tested, Kauri showed the greatest difference in its behaviour when loaded with the grain athwart or in line with the load, this being an important point to note in connection with the use of this material for stream-lined struts and other parts of that nature, or in the members of a framework. In oval struts, for example, the grain should be placed parallel to the major axis of the section, when the strut will be appreciably stiffer than otherwise. If one might know in advance what work stuff is required for, one might have the sawing done to turn it out with the grain disposed as required, but it is frequently impossible to foresee the uses to which a log or plank will be put when converted.

The Ubiquitous "Yellow."

Ordinary yellow deal, as used by house carpenters, is rather poor stuff, simply because no attempt is made to select specimens that are free from knots and other defects, while the coarser growths are very prone to turn out shaky. But the best of joiners' deal is quite another thing, and a really good piece of such stuff may be used for quite important work with every confidence. When thoroughly dry it weighs little more than silver spruce, and might very well displace the latter for some purposes, as it is much more durable when exposed to wet, and, at the same time, holds fastenings at least as well, if not better. The grain is less stringy, and it splits rather more easily, but that is unimportant for many parts—such as struts which have their ends socketed.

Deal is certainly much better than spruce for planking floats with, and it will bend better—though neither is to be compared to such stuff as mahogany for planking, as mahogany

retains a smooth surface much longer than softer woods. Deal might be used at a pinch for the inner or intermediate skins, but only the very finest and most carefully selected parcels should be considered for such a purpose. Ordinary stuff, as used by builders for joists and so forth, has been very fully tested in large sections, but the strength of ordinary grades

LaSoIn STRESS.

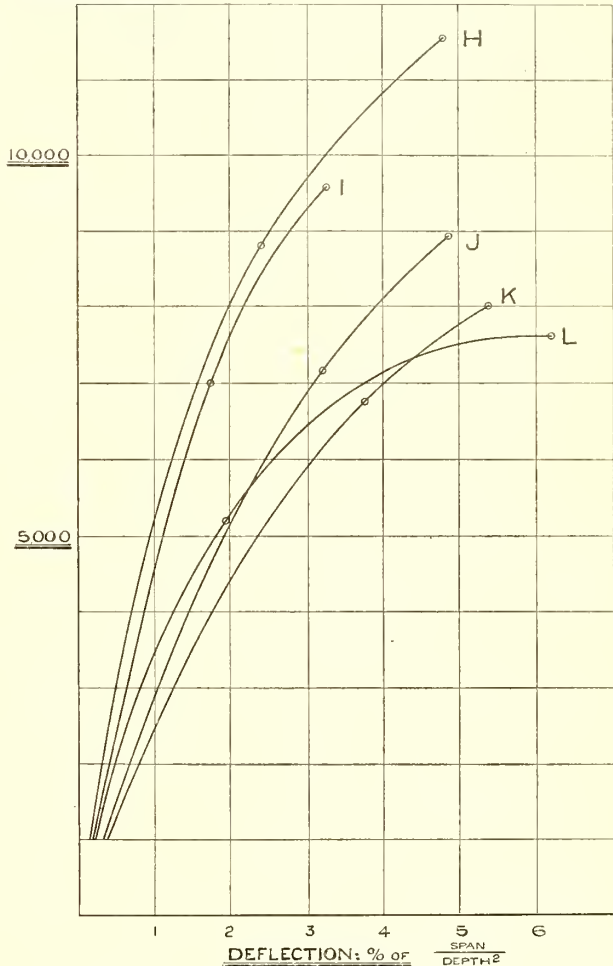


Fig. 3.

WEIGHT AND STRENGTH OF TIMBER

MATERIAL.	WEIGHT.	ULTIMATE STRENGTH.				MODULUS OF	
		TENSILE.	CROSS-TENSILE*	COMPRESSIVE.	SHEAR.	RUPTURE.†	YIELD PTS.‡
	lbs. c.ft.	lbs. sq.inch.	lbs. sq.inch.	lbs. sq.inch.	lbs. sq.inch.	lbs. sq.inch.	lbs. sq.inch.
English Ash	42-47	12000-17000	1600-2300	8000-9000	5000-6000	15000	12000
English Oak	43-58	9000-18000	600-1200	6000-10000	4000-6000	8500	7000
American Oak	45-56	9000-12000	500-1000	5000-8000	3000-5000	—	—
English Elm	33-45	9000-12000	400-1000	7000-10000	4000-6000	—	—
Canadian Rock Elm	37-45	12000-15000	700-900	8000-11000	4000-7000	9500	7000
Pitch Pine	37-43	7000-10000	350-550	5000-7000	3000-5000	11000	8500
Yellow Deal†	30-36	8000-12000	350-650	5000-6000	3000-4000	9500	7000
Silver Spruce	29-35	8000-11000	400-750	4000-6000	2500-4000	10000	7000
Kauri Pine	37-42	12000-15000	700-1000	6000-8000	4000-5000	11500	9000
Mahogany, Honduras	33-37	10000-15000	400-600	6000-8000	4000-5000	10000	8000
Cedar, Central American	30-35	8000-10000	—	4000-6000	3000-5000	6000-10000	—
Chestnut	33-42	11000-13000	—	7000-10000	—	8000-11000	—

* Greatest in curly-grained specimens, and varies considerably

† Except cedar and chestnut, from author's tests; being stress in a beam loaded centrally, ends not fixed.

‡ Selected "firsts joiner's."

is considerably less than that of the specially picked stuff the present tests were made on.

Curves J and K refer to oak tested with the grain athwart and in line with load respectively, showing what a great amount of difference the disposition of the stuff makes in the load carrying capacity—just as has been noted in regard to kauri. Curve L is also for oak, but of a different quality and quite freshly cut: note what extremely poor stuff fresh-felled oak may be. This lot of stuff was to be used for curved work, and oak had been chosen in preference to rock elm, because it is much more durable. Unfortunately, a get-rich-quick timber merchant had the trees felled too early in the autumn, so that the presence of excessive moisture in the wood weakened it unduly, and would have made it far from long-lasting.

That any hard and fast figures of timber strength are to be relied upon is an idea that will be dispelled from the mind of anyone who takes the trouble to look at these three curves for oak beams, in one of which the yield point is about thirty per cent. lower than in the other! It is a matter of common knowledge that the value of the most carefully conducted scientific tests is often little more than nil when practical everyday conditions come in; and no test figures will ever make any difference in the demand for English oak for all descriptions of work, though it is certain it might be dispensed with without prejudice to results in many cases.

In drafting the table of strengths herewith, the results of a large number of tests have been taken and checked by all the available published tables, and it is believed that the figures given will be found as reliable as any of the kind elsewhere.

Reassuring the Public.

The Secretary of the Admiralty announced last week that it had been decided that one of the British naval airships should make short cruises over London during the next few days, both by day and by night. It was pointed out that there was no necessity for the public to be alarmed at the sight of this airship over London during this time, and on no account should any attempts be made to fire at the airship.

Sea Scouts' Work.

A correspondent signing himself "The Gnome" sends an interesting note concerning the work of the 2nd Southwold Sea Scouts during the past month. The boys of this troop have been told to observe and report the passage of aircraft in their district, and the following is a list of aircraft that have passed within 10 miles of Southwold since the declaration of war:—

Aug. 9th.—7.20 a.m., aeroplane going S.W.; 11.40 a.m., aeroplane going N.N.E.; 12.25 p.m., Army biplane going N.

Aug. 10th.—11.40 a.m., Army biplane No. 70 going S.

Aug. 12th.—5.30 a.m., Army biplane (B.E.) going N.; 7.10 a.m., Army biplane (B.E.) going S.; 1.15 p.m., aeroplane going S.

Aug. 12th to 25th.—No watch kept.

Aug. 25th.—7.30 a.m., aeroplane from sea flew to coast and returned.

Aug. 27th.—5.45 a.m., aeroplane going S.

Aug. 28th.—6 a.m., seaplane going N.; 7.35 p.m., Maurice Farman No. 67 going N. (inland).

Aug. 29th.—5.55 p.m., Curtiss flying-boat No. 880 going W.

Sept. 2nd.—6.10 a.m., seaplane going S.; 6.45 a.m., aeroplane going N.

Sept. 5th.—6.45 a.m., aeroplane going N.

Sept. 7th.—6.20 a.m., seaplane No. 144 going S.S.W.; 10.30 a.m., seaplane going E., making for heavy firing.

In the gap from August 12th to 25th the Scouts were in camp.

It is eminently satisfactory to find that the youngest of the King's subjects (or should one say the youngest members of the King's Services?) take such an intelligent interest in the youngest of his Services.

Spy Mania.

Henry William Tomlin, the sub-postmaster of Eastchurch, and Ellen Tomlin, his wife, were charged on remand at Sittingbourne on September 14th with having in their possession plans of the Naval Aviation School, Eastchurch, contrary to the Official Secrets Act. Mr. F. J. Simms, barrister, who appeared for the Director of Public Prosecutions, said he was

instructed not to offer any evidence against the defendants. Counsel stated that the plan, it appeared, was the one supplied to Mr. Budd, who had formerly lodged at the defendants' house, to enable him to carry out his duties as foreman to Messrs. Siemens Brothers, who had obtained the contract for laying the electric cables at the Aviation School. The blue print and the tracing were made by Mr. Budd for his own use while carrying out the job, and he had written stating that when he left Eastchurch he thought he had destroyed the papers, and was sorry to find he had inadvertently left them. The defendants, who declared they knew nothing of the documents, were discharged.

[One hopes that the authorities apologised for this particularly foolish affair. It must be remembered that Mr. Tomlin has for years had the handling of numerous really important Naval documents sent through the post, besides probably being in a position to tap the telephone service if he wished. We might almost expect, after such an episode, to hear of a naval aviator being court-martialled for contracting German measles.—Ed.]

Presents for the Troops.

At present and henceforth for some time there is bound to be a considerable demand among kindly minded people for cigarettes and tobacco for distribution among the troops, either those doing guard duty in this country or wounded who have returned, and, in addition, quite a large quantity will also be sent abroad. Those who are thinking of buying smoking material for this purpose can be strongly recommended to obtain their supplies from Mr. W. Carpenter, tobacco specialist, 45, Queen Victoria Street, E.C. Experiments with various of Mr. Carpenter's goods show them to be of excellent quality and flavour, while the price, which will be found elsewhere in this paper, is quite moderate. The prices mentioned are quoted post free and the purchases will be sent to any desired address, properly packed to stand a sea journey, so that the sender of the gift is saved time and trouble in dispatching.

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	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Fair	Fair	Fair	Fair	Windy & Wet	Windy & Wet	Windy & Wet
East Kent...	Fine	Fine	Fine	Fine	Wind & Rain	Wind & Rain	Wind
Southampton	Fine	Fine	Dull	Wet	Wet	Wet	Fine

Hendon.—AT GRAHAME-WHITE SCHOOL: Instrs.: Messrs. Manton, Russell, Winter and Shepherd. Pupils with instr.: Flight Sub-Lieuts. Allen, Riggall, Giles, Perry, Haines, Roshier, Messrs. Carabajal, Easter, Polehampton, Greenwood, Morgan, Easter and Stalker. Straights alone: Flight Sub-Lieuts. Strong, Hope-Vere, Whitehead and Roshier, and Mr. Strickland. 8's alone: Flight Sub-Lieuts. Hope-Vere, Whitehead, Strong, Messrs. Crowe, Strickland Wiles, Morgan and Mumby. Certificates taken: Mr. Crowe, Flight Sub-Lieuts. Hope-Vere and Whitehead. Machines: G.-W. biplanes.

AT HALL FLYING SCHOOL.—Instrs.: Lawrence Hall and Clappen. Strts. or rolls alone: E. Brynildsen (18 strts.), J. Rose (6). Machines: 2 Caudron tractors.

AT BRITISH CAUDRON SCHOOL.—Instrs.: Messrs. R. Desoutter and R. M. Murray. Strts alone: Messrs. Legh, Ivermee Johnston, Barfield, Abbott, Henderson, Moon, Burke and Dr. Christie. Mr. Legh making exceptional progress. Machines: Two Caudron tractor biplanes 35-h.p. Passenger flights to pupils on 60-h.p. two-seater Caudron biplane; pilot, R. Desoutter.

AT BEATTY SCHOOL.—Instr.: Mr. Geo. W. Beatty. Pupils with instr.: Messrs. Roche Kelly (38 mins.), Smith (35), Leong (5), Whittaker (40), Elversen (4), Virgilio (30), Lord (35), Hornby (32), Gardner (15), Aoyang (15), Parker (33), Whitehead (15), Jenkinson (15), Fletcher (15), Beard (5), Lieut. Rimington (38). Certificate taken by Mr. W. Roche Kelly in very fine style to 2,000 ft. in altitude test, making spiral descent and landing on mark. Machines in use: "Dual control" biplanes.

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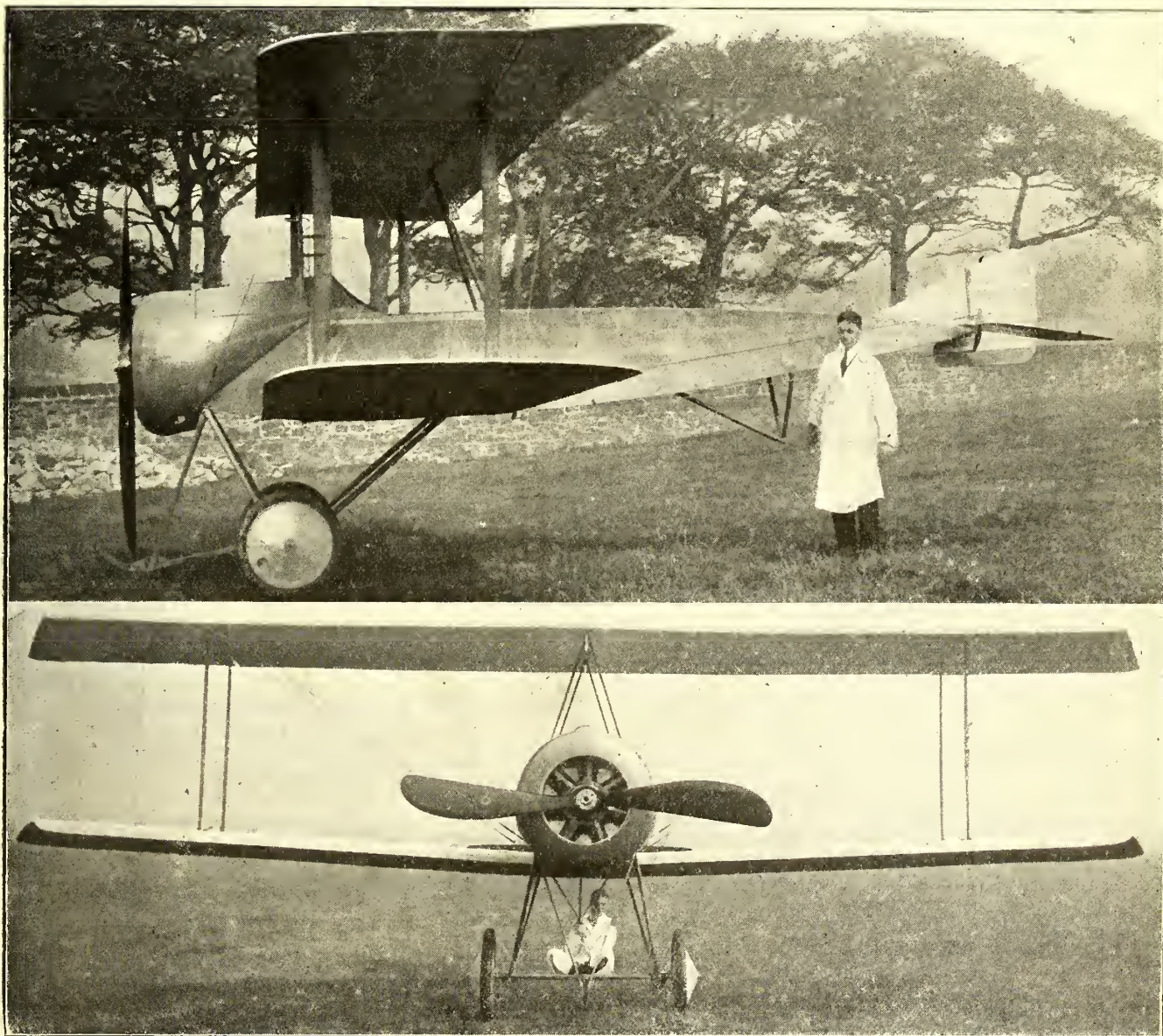
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.]
AS A NEWSPAPER.

WEDNESDAY, SEPTEMBER 23, 1914.

No. 13

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Active Service Notes.

News of the doings of the Royal Naval Air Service and of the Royal Flying Corps on active service filters through slowly, and by devious routes, but by piecing odd bits of information together one begins to learn a little of what is being done.

So far as one can gather the Royal Flying Corps has been singularly fortunate in losing very few of its personnel, or, at any rate, the losses were small up to the time of the battle of the Marne, which is as far as Sir John French's despatch of last week took us.

In the Casualty List published on Saturday last there appears the name of Lieut. V. S. E. Lindop, as being among the officers missing. Also, the relatives of Lieut. Vincent Waterfall have been informed that his body and that of his passenger—Lieut. Bayly is the name given—had been found and buried by Belgians, who duly communicated with the War Office. These latter casualties have not appeared in the official Casualty List, as they have not been sent in by the Army Headquarters in France.

It will be remembered that early in the war it was reported that a British pilot had fallen into the hands of the Germans. It seems possible that Mr. Lindop was the officer to whom this report referred, and it may be that his was the grave described in the letter from Mr. Richard Harding Davis, for no mention is made therein of the pilot having a passenger with him; in fact, the German inscription on the wooden cross to "Herr Flyer" seems to indicate otherwise. Incidentally, it is well to point out here the kindly feeling which prompted those particular Germans, in the stress of war, to give one of our pilots decent burial and to go to the trouble of putting up a cross to mark his resting-place. One hears too much of German barbarity and not enough of the acts of chivalry and kindness which are performed by our enemies. All Germans are not savages, and all British, French, Belgian, and Russian soldiers are not saints. This is a subject to which one may refer at a later date.

The known fact concerning the deaths of Mr. Waterfall and Mr. Bayly do not fit in with Mr. Harding Davis' letter, for they were found by a kindly Belgian who hid their bodies and buried them afterwards.

Deeply as everyone will regret the deaths of three such promising young officers, yet, compared with the losses of some regiments, it appears that the Royal Flying Corps has not suffered unduly heavily, especially when one considers the nature of its service and the work it has accomplished.

The R.F.C.'s Good Work.

As to the work the R.F.C. has done, it will be remembered that on reading Sir John French's despatch it appeared as if there was a lack of information obtained for the British Headquarters by our air-scouts during the critical day of August 23rd at Mons. I will not guarantee the accuracy of the information I have received, but by combining scraps of news from various sources, casual remarks in letters from France, and second-hand conversations with people who have returned from the scene of war—many of them entirely unconnected with flying—one gathers the general impression that the Royal Flying Corps did the whole of the air work for the combined French and British Armies in the North. Apparently, all the best of the French military pilots were on the Eastern Frontier—that fatal magnet which drew to it all the best French troops, and but for the first instalment of the

British Army and its mysterious support from the West, would have cost France at least another siege of Paris, and possibly the sack of the capital. All the crack French civilian aviators were hung up at Versailles, waiting for something to turn up and cursing their inactivity. Consequently, the majority of the French pilots in the North were the "tail of the team," so to speak. Anyhow, they did little or nothing, and seem to have consisted chiefly of the kind about which the French Press was so deeply concerned a few months before the war, the men who join the "Aviation Militaire" for the sake of the extra pay and the distinction of wearing the Aviation badge. A friend of mine, who knew the French service before the war, calls them "café loungers." It is no discredit to the French nation that such people exist, for we find the same type in this country and every other, but, thanks to the Department of Military Aeronautics and the staff of the Central Flying School, it would be difficult to discover any of them in the R.F.C.

Anyhow, the R.F.C. had to do all the work for both armies, and, consequently, the majority of the pilots appear to have been working with General Joffre's Headquarters and not directly with the British force. This would account for our troops seeing very little of our aeroplanes, and also for Sir John French receiving from General Joffre the first notice of the overwhelming German forces approaching against him. As I ventured to remark last week, some official explanation of the situation might easily have been given if the Press Bureau had been anything more than an arbitrary and inefficient censoring establishment which cuts out authentic news which would be grateful and comforting to the British Public—who incidentally pays its wages—and passes vast quantities of absurd yarns and obvious lies sent in by news agencies of foreign origin.

Fighting in the Air.

Apart from its success in scouting it is interesting to learn that the R.F.C. has made a practice of attacking hostile aeroplanes whenever they appear. This is particularly noteworthy, because we have never officially paid any great attention to evolving fighting machines, apart from the R.A.F.'s ill-fated "F.E." which killed Mr. Haines. This year the Vickers works went seriously into the question of building gun-carriers for land work, and the Short Brothers evolved an experimental seaplane which carried heavier armament than anything in the air had ever done before. Also, various Henri Farmans were tried with assorted machine-guns. All these types were slower than any ordinary machine used for scouting, and so it is improbable that any of them were used abroad, though one learns that Farmans armed with mitrailleuses have done well in the purely defensive work of patrolling over and round Paris. It seems probable, therefore, that the "chasse aux Boches"—or German-hunting—as the French call it, has been done by ordinary Henri Farmans carrying a passenger armed with a rifle, by Blériots similarly with a passenger, or by our tractor biplanes—Avros and B.E.s—carrying a pilot only. It may be well to explain, for the benefit of new readers of this paper (there seems to be an astonishing number of them), that the Henri Farman, being propeller-driven, affords a clear field of fire all round in front, and that in some the passenger sits in front of the pilot so that he is still better placed. In the Blériots the passenger is behind the pilot, and also behind

the trailing edge of the wings, so that he has a clear field of fire downwards on each side, and all the way round behind from side to side. In the tractor-drawn biplanes, however, in which the passenger sits in front, the propeller prevents him from firing forward, and the vertical struts between the planes limit his arc of fire sideways. Therefore, in this type it seems more likely that the fighting is done by the pilot alone, who sits well back behind the planes and can fire easily over the side of the body-work as he passes over a slower enemy aeroplane which cannot climb so fast.

At any rate, this was the view held by various officers of the R.F.C. before they went on active service. Their idea seemed to be to go up alone—partly because the machine would climb faster without a passenger, and partly because they would feel more at liberty to do as they pleased if they had no responsibility for anyone else's life—and to operate on the German aeroplanes with an ordinary long-barrelled revolver firing Service ammunition with a good solid man-stopping bullet. They argued that a bullet from a modern automatic pistol would simply make a hole and do very little damage to anything it hit, whereas a real "man-stopper" might break something badly even if it missed the man. Of course, one can make a useful man-stopper by filing the nose off a modern bullet, but, for some quaint illogical reason, the use of real or artificial "Dum-dums" is forbidden, so they preferred the old soft lead bullet, and I fancy that when the history of the war comes to be written it will be found that most of the fighting in the air has been revolver work at close quarters. It may have been noticed that several officers—not N.C.O.s or men—who have told in letters home of fights in the air as observed by them from the ground specifically mention revolver fighting, and they probably know enough to differentiate between revolvers, automatic pistols, rifles, and machine-guns.

A Tale of the R.F.C.

Talking of armament reminds me of a story of the R.F.C. which deserves to go down to history. It has worked round to me in several slightly varied versions, but by reducing it to its least common multiple it is something like this:—

Let it be premised that the R.F.C., as such, is not a fighting force, that is to say, the rank and file are not trained to fight as ordinary infantry, and the R.F.C. camps are, in the ordinary course of affairs, well behind the fighting line, so that they may be out of range of the most powerful guns, or of sudden irruption of hostile troops in case of the line being broken. The story goes that during the actions somewhere south of Mons, a certain camp of the R.F.C. was going about its work in its usual way, cleaning engines, truing up planes, doing odd repairs and so forth, when word was brought in by an aviator returning from the field of battle that one of the numerous raiding parties of Uhlans was a few miles away. In the ordinary course of affairs the game would be to prepare to defend camp in case the Germans discovered it, and to "lie powerful doggo"—as Mr. Kipling calls it—in the hopes that it would not be discovered. The notion did not somehow appeal to this R.F.C. detachment, whose C.O. had ideas on the subject of aggressive defence. Thereupon there was a sweep round the camp for all instruments of a man-killing nature, and off went an assortment of pilots, observers, engine-fitters, riggers, and air-mechanics generally, armed with what rifles could be discovered, sundry revolvers and automatic pistols—on cars which are usually devoted to the peaceful transport of breakdown gangs. Guided by the original discoverer of the Uhlans, they fell upon those gentlemen hip and thigh, assisted by certain aeroplanes which cavorted overhead, dropping bombs, of varied kinds, and generally making themselves unpleasant. In the result, the Germans effected a rapid strategic retreat (as it would doubtless be described by the German Staff), a large number of them falling out by the way, and the rest vanishing from the district. After which the R.F.C. motor-car raiders went home to tea, unhurt and highly pleased with themselves.

The names of those participating are unknown, and the whole story is an example of what might be told to the British Public by an intelligent Press Bureau. It makes a

pretty companion to the tale of Commander Samson's exploit told officially by the Admiralty on Saturday. I love the Royal Naval Air Service very dearly, but I do not see why it should collect all the lime-light, therefore I hope my confrères of the daily Press will give this story some publicity. Whether with or without acknowledgment of its source matters not, so long as some of the British Public who do not read aviation papers may be told something of the kind of stuff the creators of the Royal Flying Corps have made out of men who six months or so ago were motor-mechanics, fitters, carpenters and tinkers—awful tinkers some of them.

A New Fighting Force.

This little incident, and Commander Samson's performance, suggests ideas. This has been called a motor war, and the splendid German organisation has shown us something of how motors should be used, and how they can be used. We in this country always learn to fight while a war is in progress—as we did in South Africa, at great expense. Motors, like aeroplanes, were despised and rejected by the Great Ones at the War Office a few years ago, such as Sir Charles Hadden, Master-General of the Ordnance, who particularly discouraged such ungentlemanly things as oily engines. Hence, we went into this war with a pathetically chaotic system of motor transport. By the time the war is over we shall be quite strong in this department. Meantime, much can be done very quickly if we go to work properly.

It may be remembered that recently some real genius on the daily Press—I think it was Mr. Alfred Stead, of the "Express"—remarked that what Belgium wanted was a motor-cycle de Wet with aeroplane scouts. Expand his idea, equip a number of "de Wets" with armed and armoured motor-cars, operating in conjunction with fast aeroplanes, and one has a very valuable mobile force, which will make hay with Germany's Uhlans. Our trouble in doing so would be to find sufficient big cars for the purpose. Thanks to our system of taxing motor-cars by horse-power we have evolved this country numerous very fast, highly efficient small cars, up to 15.9 h.p.—the point where the tax takes a jump upwards—but to get the required speed these cars are far too light to carry half a ton of ironmongery round their sides and half-a-dozen men and a couple of machine-guns in their interiors. One needs the old-fashioned Dietrichs, and Merks, and Gobrons, and Berliets for this job, though we could, of course, find a number of big Napiers and Rolls-Royces and Wolseleys, and, perhaps, some Daimlers would do, if the sleeve valve engine does not take too much nursing to stand knocking about by an untutored driver.

There should be no difficulty about the personnel, for plenty of sportsmen of the right kind have volunteered for the Naval Brigade, and a useful link between the aeroplane scouts and the car section could be formed by employing some of the Army officers belonging to the Naval Airship Section, for whom there seems otherwise small chance of distinguishing themselves, seeing that the existing Army airships, of which our last War Minister but one was so proud, are as useless as Colonel Seely himself in this war.

If anything of this kind is to be done it will have to be done mighty quickly, for in two months' time at most the winter weather will have made the French and German roads practically impassable, especially when they have been cut up by whole armies passing over them. If one had time to build special vehicles one could make a fine job of them, using the largest possible wheels and the biggest diameter tyres, like those "out-size" Palmer and Dunlop tyres one sees occasionally, chiefly on the cars of affluent Hebrews—few others can afford them—but as only standard type cars are available the number of wrecks owing to insufficient ground clearance would be colossal.

Accelerating Aeroplane Production.

If we are going to develop the system which that brief official communication from the Admiralty suggests it is obvious that more and more aeroplanes will be needed, especially as we have to go on making good the wastage of war, and to supply machines for the air scouts of the new armies we shall be sending out in a few weeks, and for months afterwards. (Foreign readers please note that the British

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47, VICTORIA STREET, S.W.**

Empire has not really started in earnest yet. Our Army is only just beginning to take an interest in things.)

The supply of these aeroplanes is a fairly big proposition, and something like standardisation is necessary. Yet even standardisation is an evil thing if it is going to hang up deliveries just when they are most needed. I gather from various sources that the B.E.2 type biplanes, which were designed by Mr. de Havilland, have won high favour on active service. This paper has always held that they are magnificent flying machines, and they are vastly improved by certain alterations consistently suggested in this paper—such as fitting ailerons instead of warping the wings, and fitting properly strengthened rudders and elevators.

It seems possible that there may be a rush for quantities of these machines of the latest type—known as the B.E.2c.—to be built by various firms who have either failed to design a decent machine of their own, the firms impolitely labelled “booby firms” by Mr. Massac Buist of the “Morning Post,” or by those whose good designs have not met with official favour.

In the past I have known the B.E.2 fairly well, and those defects in its earlier types which have been pointed out to me by those who know more than I do, and have been criticised in this paper, have been rectified in the B.E.2c., but there are new things in the latest type which are nominally improvements, but are actually complications, and those complications are going to delay deliveries from firms who are starting to make these machines for the first time.

In all humility I submit to those responsible for ordering these machines that there is perhaps a way in which much time may be saved—at any rate it is worth trying. Let each of those firms who are known to be capable of doing decent work be asked to build a machine which is aero-dynamically exactly the same as a B.E.2c, but let the firm be allowed to build it in its own way, subject only to using certain standard sizes in nuts and bolts, wires, and so forth. Let the wing-

curve and all general dimensions be exactly the same as in the B.E.2c., but leave the firm free to build the wings, fuselage, and control surfaces as it pleases, let it fix them and the chassis together in its own way, and especially let the firm make its own control gear. Without going into details which it would be inadvisable to disclose, one can safely say that an ordinary commonsensical aeroplane designer could in this way save 50 per cent. in time, and 20 per cent. in cost, on the production of his first machine, simply by using easily obtainable materials and fittings which would be just as good and as strong as those which have to be specially made at great expense of time and money, because the official designers—who have evolved their pet fittings without regard to either—insist on them.

The officers who fly want these machines because they fly well and stand up to their work in spite of being left out in the open, but they do not care whether they are held together by bolts of one size or shape or another, so long as they do hold together. Incidentally, it would not take a genius to improve many of the details, especially in the control gear, so that if my suggestion is adopted it may very possibly produce a better machine. Anyhow, it will produce quick deliveries of a certain number of machines while special parts are being made to the official designs.

Meantime, those firms whose designs are in favour are turning out vast quantities of machines, and one is glad to see that virtue is receiving its reward, though, of course, all this rush for deliveries of standard patterns means that the real progress of aviation is absolutely at a standstill, for no one can afford the time to experiment with new and improved types. However, when it is all over, and the place where Berlin now stands has been levelled out into a nice flat smooth landing place for aeroplanes—as a standing—or perhaps one should say a recumbent—monument to the memory of Prussian militarism, perhaps we shall be able to make up for lost time out of the indemnity Germany will have to pay.—C. G. G.

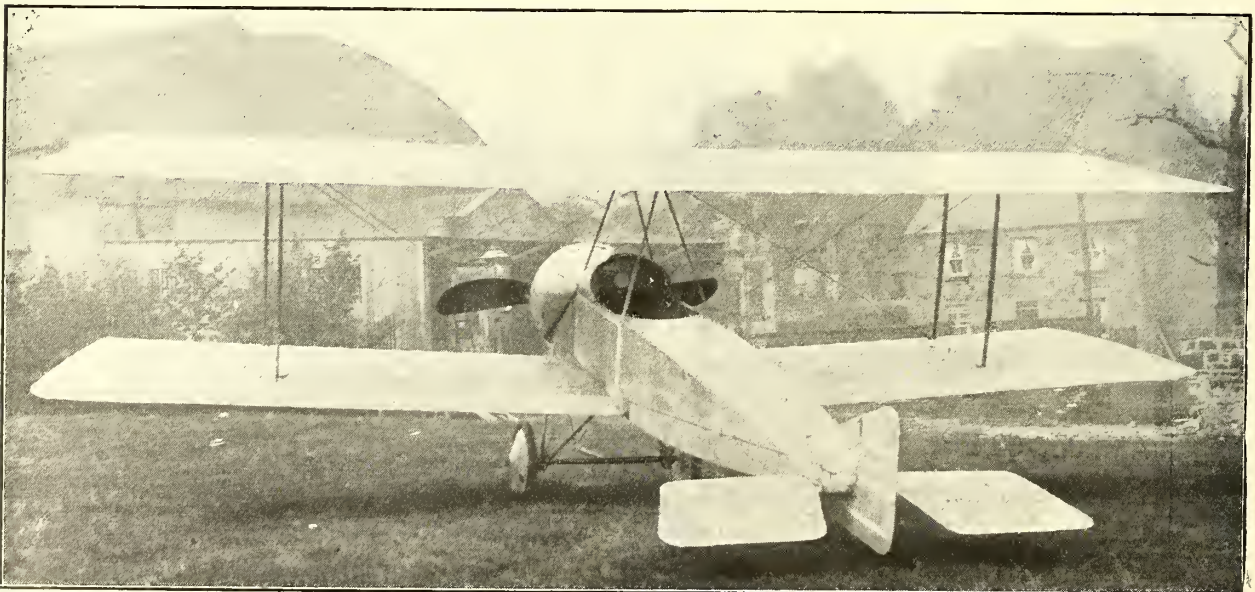
One View of the Question.

A correspondent sends this cutting from the “Birmingham Gazette” :—

“The attacks made on the aviation department of the British Army, quite recently redoubled by Mr. H. G. Wells, look small in the light of Sir John French’s glowing tribute to the Royal Flying Corps. . . . Mr. Wells argued that the Germans owed their successful march to the eyes of their airmen. Sir John

French shows that the British Forces—European civilisation—were saved by our airmen. *Let this fact be remembered with gratitude as largely to the credit of Colonel Seely as War Minister.*”

[If the writer of the above note had said, “Let this fact be remembered with gratitude to the R.F.C. for the work they have done in spite of Colonel Seely,” one might feel more inclined to agree with him.—ED.]



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Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," September 15th, 1914:—
WAR OFFICE, SEPTEMBER 15th. ESTABLISHMENTS.

ROYAL FLYING CORPS (MILITARY WING).—The undermentioned flying officers are advanced to flight commanders, and are granted the temporary rank of captain whilst so employed. Dated September 4th, 1914: Lieutenant Augustus C. E. Marsh, Royal Artillery, and Lieutenant Esmé F. Chinery, Coldstream Guards.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS. INFANTRY. THE ESSEX REGIMENT.—Hugh Evelyn Watkins, late Lieutenant 3rd Battalion, to be lieutenant. Dated September 16th, 1914.

From the "London Gazette," September 16th, 1914:—
SPECIAL RESERVE OF OFFICERS. RESERVE UNITS. 3RD BATTALION THE EAST SURREY REGIMENT.—Lieutenant Stephen C. W. Smith is seconded for service with the Royal Flying Corps. Dated August 8th, 1914.

THE ARMY SERVICE CORPS.
The undermentioned to be temporary second lieutenant. Dated September 15, 1914: Trevor Prince Searight.

From the "London Gazette," September 17th, 1914:—
WAR OFFICE, SEPTEMBER 16th. ESTABLISHMENTS:—

ROYAL FLYING CORPS (MILITARY WING).—Second Lieutenant Francis Conway Jenkins, Special Reserve, a flying officer, to be officer in charge of mechanical transport (graded as flight commander). Dated August 29th, 1914.

From the "London Gazette," September 18th:—
ADMIRALTY, SEPTEMBER 14th:—

ROYAL NAVAL AIR SERVICE.—The undermentioned gentleman has been granted a temporary commission as flight lieutenant: Charles Henry Butler. Dated September 11th, 1914.

The undermentioned gentlemen have been granted temporary commissions as flight sub-lieutenant: Ronald Portman Cannon. Dated September 11th, 1914. Petchell Burt Murray. Dated September 12th, 1914.

SEPTEMBER 15th.

ROYAL NAVAL AIR SERVICE.—The undermentioned gentleman has been appointed a flight sub-lieutenant for temporary service: George Miller Dyott. Dated September 12th, 1914.

Lieutenant Harold Edward Mostyn Watkins, Royal Naval Reserve, to be flight lieutenant. Dated September 15th, 1914.
WAR OFFICE, SEPTEMBER 18th. REGULAR FORCES:—

CAVALRY (RESERVE REGIMENTS).—The undermentioned is granted the temporary rank of second lieutenant. Dated September 19th, 1914: John Lewis Le Hunte Shedden.

TERRITORIAL FORCE:—
YEOMANRY, CHESHIRE (EARL OF CHESTER'S).—Captain the Hon. Maurice Egerton to be major. (To remain seconded.) Dated August 15th, 1914.

A third supplement to the "Gazette" of September 18th, published on September 21st, contains the following military appointments:—

WAR OFFICE, SEPTEMBER 21st. REGULAR FORCES. COMMANDS AND STAFF.

ADMINISTRATIVE STAFF.—The undermentioned temporary appointment is made: Captain Cecil C. Marindin, Royal Artillery, to be a General Staff officer, Second Grade, at the War Office, and to be seconded, vice Major B. D. Fisher, 17th (Duke of Cambridge's Own) Lancers. Dated September 16th, 1914.

ROYAL FLYING CORPS (MILITARY WING).—The undermentioned to be flying officers. Dated September 12th, 1914: Lieutenant Albert E. Morgan, 6th Battalion the Royal Fusiliers (City of London Regiment); *Lieutenant Lionel W. B. Rees, Royal Artillery; *Lieutenant Cedric Y. McDonald, Seaforth Highlanders (Ross-shire Buffs, the Duke of Albany's); *Second Lieutenant George A. K. Lawrence, Royal Artillery; *Lieutenant Jack A. Cunningham, Royal Artillery; *Lieutenant John E. Tennant, Scots Guards; *Lieutenant Barry F. Moore, the Royal Warwickshire Regiment; *Lieutenant

Edgar R. Ludlow-Hewitt, the Royal Irish Rifles; *Lieutenant John B. T. Leighton, Scots Guards; *Lieutenant Kenneth Rawson-Shaw, Royal Artillery; and Second Lieutenant Sydney W. Smith, Royal Artillery, Special Reserve. *To be seconded.

NAVAL.

The Admiralty announced the following appointment on September 16th:—

ROYAL NAVAL AIR SERVICE.—Mr. T. H. England has been entered as probationary flight sub-lieutenant and appointed to the "Pembroke," additional, for course of instruction at Hendon, to date September 12th.

The Admiralty announced the following appointments on the 18th:—

The following have been entered as Probationary Flight Lieutenants and appointed to the "Pembroke," additional, for a course of instruction at the Eastbourne Aviation School, to date as stated: D. Iron, F. G. T. Dawson, V. Nicholl, September 16th; and A. F. Bettington, M. E. A. Wright, B. L. Huskisson, R. J. F. Trench, and J. J. Petre, September 17th.

FLIGHT LIEUTENANTS.—R. G. Lock and J. W. O. Dagleish, both to the "Pembroke," additional, for Farnborough and Kingsnorth Airship Stations, respectively, to date August 1st.

The Admiralty announced the following appointments on the 19th:—

ROYAL NAVAL VOLUNTEER RESERVE.—Mr. A. W. Field granted a temporary commission as lieutenant, and appointed to the "Pembroke," additional, for duty in connection with the Royal Naval Air Service, to date September 17th.

ROYAL NAVAL AIR SERVICE.—Probationary Flight Sub-Lieutenants—H. C. Fuller and A. Nickerson confirmed as flight sub-lieutenants, and promoted to be flight lieutenants, and reappointed to the "Pembroke," additional, for Farnborough Airship Station, and Eastchurch Naval Flying School, to date August 28th and September 14th respectively; W. H. Wilson, confirmed as flight lieutenant, and promoted to be flight lieutenant, and reappointed to the "Pembroke," additional, for Eastchurch Naval Flying School, to date September 15th; J. P. Wilson, H. Stewart, D. Murray, G. Bentley Dacre, and N. Sholto Douglas, confirmed as flight sub-lieutenants, and reappointed to the "Pembroke," additional, for Calshot Naval Air Station, to date September 16th; E. B. Bauman, R. Whitehead, and R. J. J. Hope-Vere confirmed as flight sub-lieutenants and reappointed to the "Pembroke," additional, for Hendon Naval Air Station, to date September 16th.

The Admiralty announced the following appointment on September 21st:—

ROYAL NAVAL AIR SERVICE.—Probationary Flight Sub-Lieut. B. L. Huskisson, to the "Pembroke," additional, for course of instruction at the Eastbourne Aviation Company's School, to date September 20th.

* * *

Mr. T. H. England, who is appointed Probationary Flight Sub-Lieutenant, R.N., is a brother of Mr. Gordon England, the famous seaplane pilot, and of the late Mr. Geoffrey England, who was killed on a Bristol monoplane on Salisbury Plain. He has for a long time been connected with the aeroplane industry, but has not hitherto learned to fly. On his becoming a certificated aviator, the England family will probably create a British record, for there is no other instance of three British brothers having all learned to fly. The only other instance in the world which one can recall is that of the three brothers, Henri, Maurice and Dick Farman, in France, who are French citizens, though of British parentage.

Mr. J. J. Petre, appointed Probationary Flight Sub-Lieutenant, R.N., is a brother of Lieut. Henry Petre, now engaged in forming an Australian Flying Corps, and of the late Mr. Edward Petre who was killed on the Martin Handasyde monoplane at Marske. There will evidently be a race between him and Mr. T. H. England as to whom can first capture the record for the greatest number of aviators in one family.

Messrs. Dawson, Nicholl and Wright, who have been appointed Probationary Flight Sub-Lieutenants, R.N., are well

known to most people connected with our aerodromes as willing helpers in every possible way when there is honorary work to be done. All three have done a considerable amount of flying, without actually having taken their certificates. They came down from Cambridge at the end of last term and are now joining the Navy instead of returning to the University.

* * *

The funeral of Flight-Lieut. Richard T. Gates took place on Thursday of last week at Hendon Parish Church, with Naval honours. The gun-carriage bearing the coffin was drawn by mechanics of the Royal Naval Air Service, and the firing party was provided by men of the Royal Marine Light Infantry guarding Hendon Air Station. Captain Murray Sueter, C.B., Director of the Air Department, attended the funeral—a signal recognition of the work the deceased officer had done for British aviation. Among others who followed the bier from the Air Station were Squadron-Commanders Aldwell and Porte, Flight-Commander Grahame-White, Flight-Lieut. DelaCombe, the officers of the Royal Naval Air Service stationed at Hendon, Mr. Harold Perrin, representing the Royal Aero Club, and the majority of those who have had to do with the Hendon Aerodrome. The grave of the dead officer is on the slope of the hill below the church and overlooks the aerodrome which he created. *Si monumentum requiris, circumspice.*

* * *

The Secretary of the Admiralty communicated on September 18th the following statement for publication:—

On the 16th instant Commander Samson, with a small armoured motor-car force attached to the Naval Flying Corps, encountered a patrol of five Uhlans near Doullens, killing four and wounding and capturing the fifth. The British force suffered no casualties.

[Doullens is in the Department of the Somme, 19 miles north of Amiens. The place of this encounter gives a clue to the operations of the mysterious north-western Army of the Allies, which was then evidently advancing on the German right flank. It will be remembered that not long ago Commander Samson was at Ostend, at the time when some few hundred of Marines were landed there for some reason whose object has been carefully concealed. At that time rumours were current of vast Russian forces passing through England from the North. Ostend has no wharfage at which to land troops, but the small force there would act as a convenient barrier to communications between the German forces in Brussels and anything that might be happening at, say, Dunkirk or Calais. Whether the troops from the North were Russians or not, the movements of troop-trains were on so large a scale that it is clear that some hundreds of thousands of men were being transported somewhere. Doubtless these movements will be disclosed in due course.—Ed.]

* * *

A fresh contingent of officers of the Royal Naval Air Service, mounted on land machines, left for the Continent last week to co-operate with the Allies' Armies in the field. Several of them were flying Sopwith single-seater "scouts," whose speed of over 95 miles an hour should be something of a surprise to the German aviators, and confirm the idea that "something like the command of the air has been obtained." Among the "scout" pilots were Squadron-Commander Spenser Grey and Flight-Lieuts. Marix and Lord Carbery.

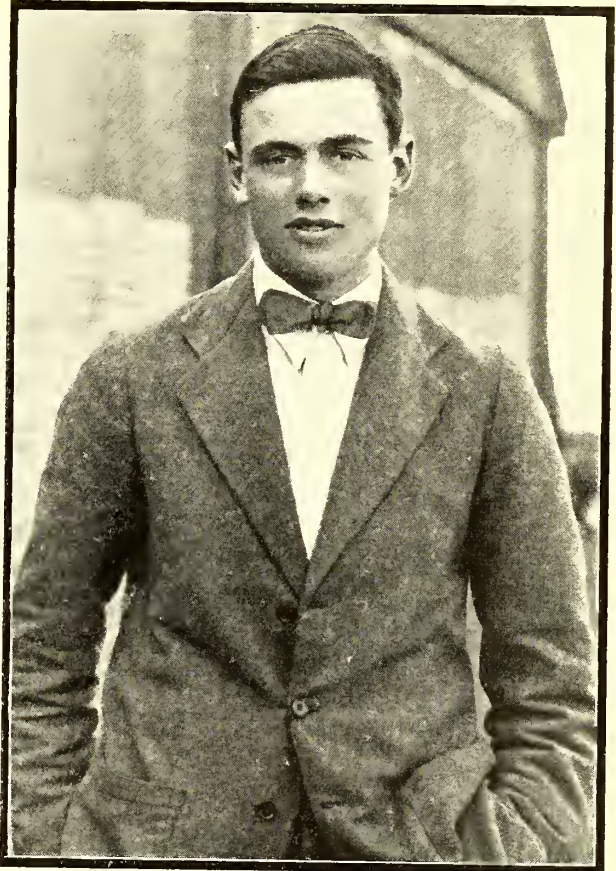
* * *

A new Wight seaplane, piloted by Mr. Gordon England, has been flying over Southampton Water during the past week, and one gathers that on Friday last it put up a very fine performance.

MILITARY.

The relatives of Lieutenant Vincent Waterfall, R.F.C., have been informed by the War Office that his body and that of his observer, Lieut. C. G. Bayly, were found by a Belgian at some place not stated, and were hidden so that they should not be found by the Germans.

Mr. Waterfall will be remembered by many at Brooklands as a very promising pilot. He took his certificate No. 461 at



Lieut. Vincent Waterfall, R.F.C., reported killed in Belgium.

the Vickers School on April 22nd, 1913, and afterwards flew on various machines, particularly doing some good flying on the Martin-Handasyde monoplane. Personally he was a fine specimen of the best type of English public school boy, and had the makings of an officer of the very best class. His high spirits, which were absolutely without harm to anybody, and his unflinching good nature, endeared him to all who knew him, and he will be greatly missed and deeply regretted by his many friends, who will join in tendering to the lady to whom he was engaged and to his relatives their deepest sympathy. Mr. Waterfall joined the Flying Corps direct in July for a course of instruction at Farnborough, and was gazetted a Flying Officer on August 24th, with date of August 5th.

Mr. Bayly was an officer of the Royal Engineers, to which Corps he was appointed on July 31st, 1913. He was appointed to No. 5 Squadron, R.F.C., from the Central Flying School immediately on the outbreak of war. His appointment was gazetted on August 14th, to take effect from June 30th.

* * *

Lieutenant V. S. E. Lindop, whose name appears among the missing in the Casualty List issued on Saturday, the 19th, is an officer of the Leinster Regiment, of the 1st Battalion to which he was appointed on August 13th, 1912. He was under instruction at the Central Flying School during the course which ended just prior to the outbreak of war, and was appointed to No. 3 Squadron, Royal Flying Corps.

Captain H. H. Shott, D.S.O., Royal Berkshire Regiment, who is notified as wounded, learned to fly at the Bristol School at Brooklands, at which he took his certificate on June 30th, 1913, but he was not appointed to the Royal Flying Corps.

* * *

Lieutenant H. E. Watkins, reappointed to the Essex Regiment, from which he retired a year or so ago with the rank of Captain, will be remembered as a pilot of various machines at Brooklands, notably of the Howard Wright biplane belonging to

Captain (now Lieut.-Colonel) E. M. Maitland. He went to Australia in charge of a Vickers monoplane with the Mawson Antarctic expedition, and there had a slight accident. After his return he met with a very serious smash on Mr. Herbert Spencer's biplane, which laid him up with a fractured thigh for many months. He is now, however, quite fit, and should be of considerable value to his regiment.

* * *

Mr. T. P. Searight, appointed to the Army Service Corps, will be remembered by those who were connected with aviation in its early days as a partner with Mr. Alec Ogilvie in the Wright biplane with which Mr. Ogilvie did much good flying at Camber in Sussex.

Mr. J. L. Le H. Shedden, who has been granted a Cavalry Commission, was Mr. Copland Perry's partner and manager in the Perry Aviation Co., which has come to an end owing to the death of Mr. Perry on active service.

* * *

Various correspondents in Paris state that among the British aviators they have met within the course of the last fortnight are Lieuts. Stoddart, Denys Ware, Valentine, Strange, Small and Roche.

* * *

From the "Times," September 18th:—

"It's the greatest fun in the world." Thus a member of the British Flying Corps with its spread wings embroidered on his tunic. Yesterday he flew over the German lines at the River Aisne.

He was sniped at by a hundred sharpshooters and blazed at by guns throwing a shell specially designed for this work. Several of the bullets pierced the wings of his plane; a shell burst close beside him, sending him reeling sideways. But he continued and finished his reconnaissance; marked the placing of the great guns, the lines of the trenches, the direction of the shell fire and even at one moment swooped down close to a wood where artillery was concealed, taking almost unthinkable risks.

I wrung this story, not from himself—that would require the proverbial wild horses—but from a friend to whom it had been casually confided. I ventured to mention that I was aware of it. The answer was characteristic. "A hundred men have done the same." I am able to say that almost every member of our corps has been fired on not once but dozens of times. During the course of almost every aerial reconnaissance bullets pierce some part of the plane. No work so risky that our airmen have not essayed it, and they have won priceless information.

The enemy's airmen now scarcely attempt to combat with this corps. I heard an airman complain yesterday that during the past fortnight every German he has encountered has fled away from him. "I chased one of them for miles," he declared, "but he escaped me in the end. They have fast engines." Already 17 German aeroplanes have, I am told, been destroyed by British airmen. As on the sea, so in the air the German has to a large extent been driven within the shelter of his big guns.

[The information given above is of high interest, but one regrets to find the literary style of the "Times" approximating so closely to that of the "Reflector" or "Home Slops."—Ed.]

FRANCE.

A friend in Paris, who is closely in touch with French military aviation, writes that Sapeur-Aviateur Louis Noel has been strongly recommended for the Military Medal of the Legion of Honour. It appears that he had had a rather bad motor accident, and that when an alarm of a Zeppelin came in, in spite of his bandages, he insisted on going out in the dark to hunt for it. It will be noted that M. Noel, with characteristic modesty makes no mention of this in the post-card printed below. One learns also that M. Noel has now got his Military Brevet.

As already noted Capt. Oswald Watt is in command of a Blériot Escadrille, in which are the Sapeur-Aviateurs Louis Noel, Chemet, Poumet, Bathiat, and Ladougne.

Up to the 11th no further news had been heard of Sapeur-Aviateur Chevillard, who had gone to Mourmelon by car to

fetch a Farman on September 1st. He must have arrived there just about the same time as the Germans occupied the place, so that it is hoped that he is merely a prisoner.

Mr. Bernard Howard, who was the first British pilot to take the French Military Brevet, went out on a reconnaissance on the 6th, and he also had not been heard of up to the 11th.

This correspondent also confirms the golden opinions won by the Royal Flying Corps among the French Army. The French say the English aviators "Never talk but go and do things," which presents a marked contrast to the behaviour of some of the French officer-aviators, though it must be said that the French N.C.O., and "sapcur" aviators are splendid in their bravery and efficiency. The root of the trouble seems to be that, as was pointed out in this paper months ago at the time the French press was discussing the question, too many French officers belonging to the commercial classes and not to the aristocracy joined the aviation service simply for what they could make out of it.

M. Gilbert, the famous French flier, was in London recently, wearing the Médaille Militaire for distinguished service in the field. Unfortunately the mutual friend who met him had no time to extract from him any description of the particular feat which won this distinction. M. Gilbert had one hand in bandages, but otherwise looked exceedingly fit.

It is reported that M. Brindejonc des Moulineaux has been awarded the Cross of the Legion of Honour for special bravery in action, but no details of the feat which won the Cross have yet been received.

Further letters from Paris state that M. Garaix, who did some extraordinary feats of bomb-dropping with shells of naval design, in the Paul Schmidt biplane, is, after all, alive and well, or at any rate was up to September 13th. He went out on one of his expeditions, and on returning landed at the point from which he had started, only to find that the French had retired and that the country was occupied by the Germans.

The French lost two pilots lately, names unknown, at the military grounds at Saint-Cyr, by collision in the air. Both were flying Caudrons, and one of them in coming down cut the tail off the other. Both pilots were killed instantly.

A soldier in a French engineer regiment has written to his family near Nevers the following letter:—"This morning while our convoy was leaving the town a German aeroplane flew over us. We fired on it, but could not bring it down. Then M. Védrines started off in a 180-h.p. monoplane and pursued it. M. Védrines rose to a height of 6,000 ft., and brought the Taube down with a mitrailleuse. This is the twenty-first German aeroplane destroyed, and the second brought down by M. Védrines in three days."

[The machine used by M. Védrines was no doubt the new Blériot mono-coque described in this paper some weeks ago. It has a Gnome engine of 160 h.p., not of 180 h.p.]

It is reported, on not very reliable authority, that recently a French aviator destroyed the permanent way and held up ten trains full of Germans who were ready to start. Another aviator destroyed two German food trains.

The "Journal de Rouen" publishes an account of how a squadron of dragoons succeeded in capturing six German aeroplanes between Compiègne and Soissons. After several hours of fighting news was brought them that eight German aeroplanes were taking shelter in a large barn. The dragoons went to the barn and succeeded in destroying six of the aeroplanes. They were then interrupted by the Germans in force, who opened fire on them. All the French officers except one were killed, while the survivor was wounded. Eventually seven men out of the 130 who set out returned to their base safe.

The "Telegraph" gives the following interesting story of a fine piece of aeroplane work, as recorded by a wounded chasseur:—"He recorded an exciting adventure of one of the French aeroplanes. A temporary aerodrome had been established at —, whence daily excursions were made to discover the German movements. While on one of these expeditions an aviator observed the movement of some guns, and thinking they might be brought into immediate operation against the French batteries, which had already been harassing the Ger-

mans, he flew low to draw their fire and so disclose their position at once to the French.

"Five times in rapid succession," said the chasseur, "the Germans fired on the aeroplane. But each shell exploded far behind the aeroplane, which suffered no harm. The manoeuvre was absolutely successful. The French gunners soon found the mark, and we were not troubled by artillery from that quarter. The aeroplane returned to the aero park safe and sound."

The diary of an inhabitant of Crépy-en-Valois, a village south of Compiègne, given by the "Times" Paris correspondent, indicates the fate of some German aeroplanes during the German advance on the Marne, and the retreat therefrom:—

August 31st.—French wounded came, and after them German cyclist and cavalry patrols. A Taube appears and drops a bomb on the village.

September 6th.—The German troops appear to be hesitating whether to march north or south. Another aeroplane drops a bomb on a factory used as a hospital.

September 7th.—French troops arrive and capture quantities of German stores. They explode a store of 5,000 shells in an open field. A German aeroplane is brought down near the station.

September 8th and 9th.—Cannonade begins again and goes on unceasingly. Another German aeroplane catches fire and falls near the station.

The "Hamburger Fremdenblatt" of September 5th states that when the Germans entered Reims "20 monoplanes, ten biplanes, and 40 Gnome motors of best quality were seized. The value of the capture amounted to about one million marks (£50,000)."—[These were presumably the stock of the Deperdussin, Ponnier, Bathiat-Sanchez, and other firms at the Aerodrome de la Champagne, and not of the Military Centre, though, presumably, a few military machines which were unable to fly would be taken, if not burnt first. Those mentioned above would be chiefly school machines.—Ed.]

Mr. G. H. Perris, of the "Daily Chronicle," notes that among the booty from the German retreat brought into Paris on September 15th were three aeroplanes. It seems waste of time and men and transport to bring them away from the place of capture.

The "Times" correspondent at Soissons reports:—"We had a lot of trouble to guess where the shells were coming from, but we could see our airmen hunting about, and after a while our big guns spoke up properly and gave us a chance."

The following postcard has been received from the Sapeur Aviateur Louis Noel, by the Editor of THE AEROPLANE:—

"Mon cher Ami,—Since I wrote you last I made several fine reconnaissances, and have flown 60 kms. over the German line. It was really very fine to see everything from above. My escadrille is leaving St. Cyr in a few days to go to join the Army. Am very happy for that. To-day I met Valentine and Strange at Buc. We were so pleased. Before long I will write you a long letter. Good-day to everybody! I had a bad auto smash other week, but now am quite all right.—(Signed) Louis."

The following is from a letter from an officer of the 3rd Batt. Coldstream Guards, which has just been received in London:—"My company again distinguished itself yesterday, after arriving in bivouac, by firing at a German aeroplane and bringing it down. We did not see it drop, but it was riddled with bullets and came down just within our lines. The battalion has its tail well up and is in enormous spirits."

One of our wounded, Private Harmar, of the K.R.R., reports: "At one place during the retirement an English airman flew over the German lines three times. He seemed to do it for devilment. He was out of rifle range, but the Germans were shelling him for all they were worth. That airman seemed to have a charmed life."

"I saw a fine scrap in the air between a British and a German aeroplane. The British airmen can move about quicker and have a much greater speed. Our man got above the German, who tried his hardest to escape. The Englishman was firing his revolver, and the German seemed to plane down in good order, but when he got to the ground he was dead."

GERMANY.

A telegram from Berlin, the object of which is presumably to create an impression in Holland, states that the greatest activity prevails in the German airship construction works. At least one new airship and about seventy aeroplanes are completed each week.

Upwards of ten thousand volunteers have been enrolled for service in the army air fleet, and 3,000 for service with the air squadrons of the navy.

By way of a reply to this one may quote Mr. C. C. Turner, who, writing in the "Observer," says, in answer to a story published by Mr. Massac Buist in the "Morning Post":—

"As to the assertion that Germany has made in secret a large number of small Zeppelins, about 300 ft in length, it is sufficient to point out that it would be scarcely less difficult to build large numbers of airships of this size in secret than it would be to build the 500-footers. Moreover, so small would be the margin of lifting power of a 300-foot Zeppelin that it would be impossible to carry engines that would give anything like reasonable speed. Such craft would be 'fair weather craft' absolutely.

"And, by the way, Germany must operate from her existing airship stations on her western frontier for a raid on England. The idea that by holding the Belgian and the western French coasts she would establish new airship bases is unthinkable. An airship shed takes longer to build than a Zeppelin airship."

[One may add, however, that with the experience and equipment of the Parseval Co., who would doubtless have parts of nacelles made by other firms, and with the assistance of the Augsburg Rubber Works, who have made the envelopes for practically every airship of any size on the Continent, it should be quite possible for Germany to turn out small air-


**CORRESPONDANCE
DES ARMÉES
DE LA RÉPUBLIQUE**

NOM, ADRESSE DE L'EXPÉDITEUR

Louis Noel

Aviateur, militaires


1er reserve, St. Cyr.



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NOTA.—Pour la destination, consulter l'affiche apposée dans les Bureaux de poste et dans les Mairies.

The neat and effective postcard issued for the use of the French troops. The Allies' flags are printed in their proper colours. It contrasts favourably with the brown paper cards issued to the British troops.

ships of about the size of our Delta or Eta, or even the Parseval, at the rate of one a week, but they are not Zeppelins, and are at the mercy of any aeroplane. Seventy aeroplanes a week may be an exaggeration, but it is quite a possibility, judging by our own present output, and comparing what our hitherto discouraged manufacturers are doing and what the encouraged German makers ought to be able to do, but it is well to remember that the British, French and Russian output combined must be immensely greater. Probably the wastage in the war and in practice absorbs fully that number.—Ed.]

The official German war news reports that three German aviators appeared over Paris on Wednesday and a number of persons were killed by bombs thrown upon them. The aviators succeeded in escaping, but several persons were killed and injured by shots which were aimed at the aviators.

[Possibly this refers to the incidents of three weeks ago when "la chasse aux Boches" had not become a popular pastime with French aviators.—Ed.]

The "Telegraph's" Paris correspondent reports that the Kaiser, it would seem, has yet another surprise in store for the Allies. Every dark night during the past six weeks—so the story runs—a Zeppelin has left its hangar at Friedrichshafen, on the German shore of Lake Constance, and after rising to a height of about 1,000 ft. has, "with great rapidity and precision," dropped upon the waters of the lake some fifty basket-shaped missiles which contain torpedoes. "The explosion is terrific," a great column of water rising high into the air. The Germans, we are told, hope great things from these ghastly engines. They hope, among other things, to drop them on the English and French fleets.

[It seems unlikely that the British Fleet will be seriously discommoded, for one has yet to hear of a Zeppelin which can rise above the range of the new high-angle guns, and at anything over 3,000 feet or so the bomb-dropping is likely to be somewhat erratic. On land at night such missiles might be rather a nuisance to tired troops enjoying a well-earned rest. In daytime the air-ships would have little chance of escape from our aeroplanes.—Ed.]

It is officially announced that the German airships have thoroughly fulfilled the great expectations formed of them. In no case has unavoidable damage been sustained. No airship has fallen into the enemy's hands. On the other hand,

the French have reported the destruction of six German airships.

Extracted from the diary of German prisoner, a lieutenant of artillery, as reported by the "Telegraph":—"I am so tired that I can hardly keep on my horse even at a walk. Even at night our troops have no rest. A French aviator dropped four bombs on us last night. Three hit—twenty horses were killed or wounded, four men killed, and eight wounded."

RUSSIA.

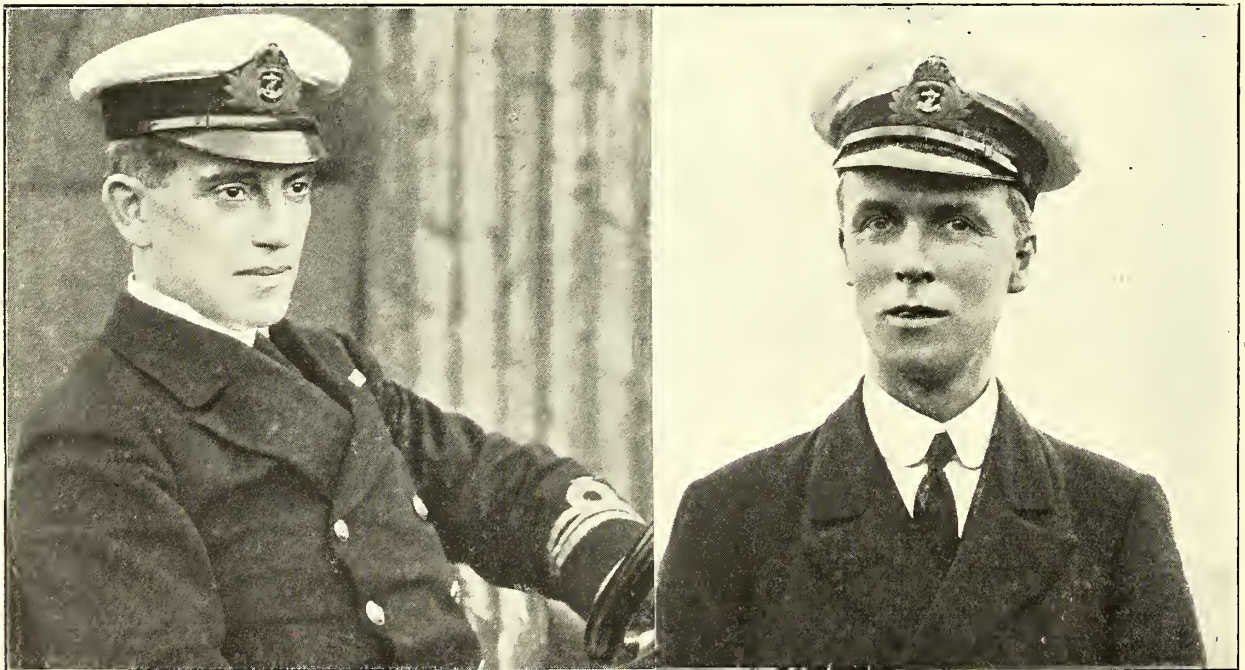
Mr. Perceval Gibbon, of the "Daily Chronicle," reports from Petrograd:—"An agent for French aeroplanes here who has fulfilled an enormous Government order tells me that whereas private aviators in Russia are not numerous, her military aviators, trained within the last couple of years, outnumber those of any other country. He adds that since the war began the aerodromes have been turning them out by the half-hundred. You can teach a Russian anything, from a foreign language to a Gnome engine. They are not perhaps careful and prudent aviators, but for brilliancy and dash they are on the pattern of Nestaroff."

Reuter's representative at Petrograd reported on Saturday that when the Russian troops evacuated the district of Krasnik a Cossack officer named Tkatchoff was reconnoitring in an aeroplane when a bullet pierced his petrol tank. With the greatest coolness the officer stopped up the hole with his foot and continued his flight, eventually coming to ground in the space between the hostile firing lines. The machine was brought safely into the Russian lines.

[It must have been "some hole" to take a foot to plug it. Also one doubts whether a Cossack officer would be flying as a military aviator. Still, the story is worth telling as an example of ingenuity, whether Reuter's or the aviator's one one cannot say.—Ed.]

From Petrograd on September 18th the "Morning Post" correspondent sends the following message:—"To-day comes along a most amusing example of the touching confidence of the Germans in the power of the lie in the form of a proclamation to the Russian soldiery. This production is dropped from aeroplanes over the Russian forces. It is, of course, in Russian language "as she is wrote" by none but Germans, and runs as follows:—

"Soldiers! On the Austrian frontier the Russian Army has been routed and is retreating. Poland is in rebellion. It



Photographs by F. N. Birkett.

R.N.A.S.—On left, Squadron-Commander G. W. R. Aldwell, and on right, Flight-Lieutenant H. DeLaCombe, who are in charge of the recruiting of mechanics for the Royal Naval Air Service at Hendon.

Moscow and Odessa a revolution is in progress which will shortly spread over all Russia. Your commanders tell you we torture prisoners to prevent you surrendering. Believe not this calumny. Think for a moment where would the executioners come from to put to death an army of hundreds of thousands of Russian prisoners. Your prisoners are now living quietly in the interior of our country, together with French, Belgian, and English, and they are all very, very happy. Why lose your lives for a lost cause? Live rather for the sake of your wives and children, for your native home, for a new and happy Russia!"

BELGIUM.

Various reports state that there is in fact widespread insubordination among the Bavarian troops in Belgium. Some of them refused to fire on a Belgian aeroplane which passed over Brussels, and 400 of them were afterwards marched through the streets under a Prussian guard, unarmed and wearing neither belts nor caps. [The chief cause of their mutinousness is that Queen Elizabeth of Belgium is a Bavarian Princess and they resent Prussian insults to her. Bavarians and Prussians have always been enemies, and one of the first great blows to Prussia will certainly be the breaking away of Bavaria from the German Empire.—Ed.]

The Antwerp correspondent of the "Nieuws van den Dag" of Amsterdam states that a Taube aeroplane appeared over the city on Thursday morning. It approached from a western direction. A Belgian biplane gave chase, and the German aeroplane disappeared southward.

At 7 a.m. on September 17th another Taube flew over Antwerp. Coming from the west, it circled, flying low until near the gasworks. No bombs were dropped. The forts endeavoured to bring it down without success, the Taube rising to a great height immediately after passing the old fortifications. The Belgian aviators gave chase, but the Taube escaped in the direction of Wilryck.

Reuter reports that on the night of September 12th a Taube aeroplane appeared over Antwerp and was fired upon. One officer was killed and another wounded. Both had franc notes in their pockets, and it is reported that these notes are forgeries, printed by the Germans, and bearing the signature of the directors of the National Bank. [To the imaginative this must suggest a German plot to ruin Belgian finance by circulating vast quantities of forged notes. Perhaps Herr von Reuter's ingenious correspondent in Amsterdam got the idea from a recent novel in which Sir Edward Grey was credited with ruining Germany's internal affairs in just this way.—Ed.]

The "Daily Chronicle" correspondent, Mr. L. A. Jones, at Antwerp, reports on September 20th that the German troops had encamped in force at Braine-le-Comte. Fearing an attack, they had placed several heavy guns cunningly ambushed in the Bois de Casteau. A German "Taube," which was unacquainted with the facts, let fall several bombs, under the idea that the guns were British. The German aviator contrived to kill about 30 of his own comrades.

[If the incident is of recent date it points to the existence somewhere in Southern Belgium or North-Western France of that mysterious North-Western Army of the Allies with which our Naval aviators appear to be operating, for Casteau is close to Mons.—Ed.]

Private Schofield, of the 1st Cheshires, gives an account of a duel between German and French aeroplanes near Mons, in which his regiment was badly cut up. Of 1,400 who started only 5 officers and 120 men have as yet been accounted for. "While near the railway station at Dour," said Schofield, as transcribed by a newspaper reporter, "a German aeroplane was the first intimation of the proximity of the enemy. Our artillery were unable to bring it down, but suddenly from behind us a French aeroplane appeared, and hovered above the German aircraft, which at this time was flying from end to end of our trenches. What precisely happened I cannot tell, but shots were exchanged between the aeroplanes, and the next thing we saw was the German aeroplane spin round as if all control of the machine had been lost, and it came down with a sickening crash just behind our trenches."

[It may be taken that the winning machine was British, for

one gathers that there were no French aircraft in use in that district.—Ed.]

A private of the South Wales Borderers, invalided home to Newport, Mon., as the result of a shrapnel wound, speaking of his experiences at Mons, is reported by the "Times" to have said:—

"While we were lying quietly in the trenches a British aeroplane came down with two passengers. They had ascertained the whereabouts of the Germans, and officers of the Borderers lent them horses to ride with the news to the General of Division. When the airmen returned they said, 'Duck your heads now, boys, we are going up again.' No sooner had the aeroplane ascended than we heard the whizz of German shells. We saw 20 or 30 specks of smoke around the aeroplane, and heard loud reports, but the aeroplane kept on.

"The Germans are accurate judges of distance, and their aeroplanes have done them good service. You hear a whizz above the clouds, but you can't see anything. The next moment you are surrounded with shells."

HOLLAND

Mr. Edgar Rowan, of the "Daily Chronicle," reports from Amsterdam that a Ymuiden fishing boat just returned from the North Sea reports having seen a German trawler laying mines. She was escorted by a Zeppelin and a submarine in case of attack.

ITALY.

Chiefly to avoid the danger of letting lesser interests go because of the greater matter which occupies so much of our thoughts, I am sending along my usual notes, which must inevitably fall somewhat flat in such a moment. [Not in the least, my dear Mr. Harvey.—Ed.]

From the dailies I learn that on September 1st a Farman hydro-aeroplane, piloted by Sergt.-Major Rosetti, and stationed at the Trasimene Lake, elevated itself and the Italian record for waterplanes to 8,000 ft. in the course of a "recognition" over Perugia and district. In those days, too, Piacenza, which has seen little aviation for some time, welcomed two Service pilots who arrived from Turin on a biplane. Unfortunately the passenger in exhibiting the next day damaged the machine badly, owing to the motor not picking up after a glide.

The Uselli dirigible, which I last mentioned a few months ago as having had its envelope carried off a second time by the perfidious big breezes around Milan, is now cruising about in this district as happily as ever. [If it loses its envelope so frequently one takes it that it is not uselli dirigible, as it must spend most of its time on the ground.—With apologies.—Ed.]

Important changes are announced in respect of the supreme control of this country's aerial forces.

A course of Military training to fit volunteer aircraft pilots for their country's service, in pursuance of a scheme suggested by the President of the Italian Aero Club some months ago, is also announced. This, of course, is no new idea, though it is possibly one of the many good moves hastened on by the present conditions. Many civilians are joining the course.

I hear that another pioneer, in the person of Engineer Darbesio, has accepted a Government post as Advisor-Constructor—or Constructor-Advisor—as Signor Darbesio constructed some years before he was called to advise.

Fine performances, of which I am expecting personal confirmation, are reported from San Giusto, Pisa. An all-Italian biplane is spoken of. Italy has had many monoplanes, but I believe no all-Italian two-decker has ever existed, as a flier.

From mere hearsay things are by no means stagnant over Pordenone way.

As in other countries, want of preciseness will soon become second-nature, an unnatural nature nurtured on reticence and misleading headlines.

Military flying appears to be unusually frequent; several tickets have been taken at Aviano every week this month. Many of the well-known officers have returned to the schools to get the rust out of their wheels, or should one say hands?

M. III. safely accomplished her flight announced in my last. The papers announce a long night-flight successfully carried out,

7 hours of travel are mentioned. She is stationed at Iesi. Altogether, the expected paralysis has not taken place.

This wonderful nation still allows itself to indulge in commercial aviation, perhaps the only commerce which is not suffering from a partial seizure of its mainspring. Emilio Pensuti continues testing Capronis and just recently flew from Somma to Pordenone and back on a new model two-seater. —T. S. HARVEY.

SOUTH AFRICA.

Reuter's Agency learns on reliable authority that of three German aeroplanes in the southern part of Africa only one is effective. One was imported for show purposes and is of little practical use. It is now at Dar-es-Salaam. The other two are high-class military aeroplanes and are in German South-West Africa. One of these was, however, irretrievably damaged at Keetmanshoop early in August while the pilot was attempting to alight. [To which one may add that of the British aeroplanes in South Africa none are effective and there is no one to fly them. There are, however, several South African officers in this country who may later on take some aeroplanes out with them.—ED.]

AUSTRALIA.

The Australian Central Flying School has now started at Werribee, Victoria, just about 18 miles along the coast from Melbourne towards Geelong. It is surrounded by the most perfect country for flying, flat and practically without trees. A correspondent of THE AEROPLANE writing on July 23rd says that the aeroplane camp is situated among one of the few clumps of trees in the district, and the machines are housed in a tent built in Melbourne to the design of Lieuts. Eric Harrison and Henry Petre, who are in charge of the school. Starting work on March 1st, these two officers have covered between them about 2,800 miles practically all across country.

CHINA.

The Germans report that an aeroplane dropped a bomb on the Japanese on Thursday last, killing 30 and wounding a large number.

A despatch received at Tokyo on September 18th by the Government from the Commander of the Second Japanese Squadron reports that aeroplanes attached to his squadron reconnoitred Kiao-Chau Bay on the previous day. Bombs were dropped on the enemy's ships in the harbour, the wireless station, and the electric power station. One of the bombs was seen to strike a large ship from which smoke was subsequently seen to arise.

FROM DENMARK.

The following despatch from THE AEROPLANE's Danish correspondent, though dealing in parts with belated news, is of interest because of its fresh point of view and expression. It is published unedited:—

The aviator Post and his observer Silberhorn, both belonging to the voluntary aviators' corps, last Friday made a flight from the aerodrome at Johannisthal, near Berlin, to obtain the superior Military Brevet, for which he had to fly at least 1 hour at a height of 3,600 feet, and only those aviators who possess this superior brevet are allowed to go to the front. Post had only taken his ticket a few days ago, had several times been warned by his teacher against hazardous flights. Yet, he would land in a steep corkscrew "vol-plané" from 3,600 feet, which resulted in a steep dive, the aeroplane capsizing, the two men were thrown out and killed at once.

A German flying officer gives a word-painting of a very dangerous flight, on which he was the observer and where the aviator was killed:—

"We started early in the morning to fly to Sedan and watch the forward march to the North by the French. After some time we flew into heavy clouds of rain and were forced to go down to a height of 3,000 feet. At the same moment we heard musketry and saw beneath a whole French division ready for a fight. The aviator was hit by a bullet in his breast, the motor stopped, and the aeroplane fell quite down towards the enemy troops, who shot eagerly against us. My place as an observer was in front of the aviator, and when we had fallen to 2,400 feet and the aeroplane had resumed its normal position, I turned to him and saw that his head had been hit by another bullet, and that he had died. At once I

leaned back over my seat and seized the wheel to try and reach a forest lying near. The aeroplane had now dived to 600 feet, and a shower of shots were fired at us so that the bullets whizzed round our ears. Suddenly, I felt a blow on my forehead, blood ran into my eyes and almost blinded me, but I remained conscious (kept sensible) and tried to steer on. However, a gust turned the machine on its side, my dead fellow-companion lay on the wheel, so I could not manage other than to land rather abruptly among the enemy.

"The aeroplane capsized, ran on a hedge, and I was slung out. The Frenchmen hurried to me, always shooting; I took out my revolver and wounded three, when I had a bayonet before my breast. An officer arrived, saying: 'Let him live, he is a brave soldier.' I was brought to the surgeon, who removed the bullet. My safety helmet had protected me well, so that the bullet had not penetrated the skull. The French officers treated me well, giving me red wine, as I was much fatigued by the loss of blood. They told me that I should be sent to Paris, where 4 other captured German aviators rested. However, only shortly after the Frenchmen were attacked by my proceeding landmen. I found a hiding-place beneath a bush, and when the German had won, I was brought to a hospital."

On one of the wagons, transporting German troops to the front, the Berlin newspaper, "Tagliche Rundschau," found the following Zeppelin verse:—

Zeppelin flieg!	Zeppelin fly!
Helfuns im Krieg!	Help us in the war!
Fliege nach England!	Fly to England!
England wird abgebrannt,	and set her to fire,
Zeppelin flieg!	Zeppelin fly!

Fugitive German arriving in Denmark tell that the Ministry of War is very anxious to enlist volunteers to the airship department.

Every day German aviators fly over Poland dropping proclamations, which tell that the day of liberty is nearing, when the Poland, the Russian, and Austrian, as well as the German join the ranks of the brave German soldiers.

The Dutch newspaper, "Rotterdamsche Courier," tells that 42 English aeroplanes have been brought to Belgium.—[Presumably the reference is to the land machines of the R.N.A.S.—ED.]

Rumours are heard here that Vedrines should have been shot by the Frenchmen, because plans of the troop arrangements were found in the tubes of his aeroplane, when he would start. I have wired to our Paris correspondent to have this news stated, have, however, had no answer till yet.—[Probably a companion story to the Garros and Hirth lies.—ED.]

Our correspondent at Paris wires via Ghent, Sunday, September 6th:—"The Military authorities have posted station sentinels all round the circumference of Paris. They shall at once cry alarm and tell the armoured camp when a hostile aviator approaches. On all the high buildings guard duties have been established, as well as stations for firing at the aerial crafts. On the Issy les Moulinaux plain Army aeroplane guards have been erected for persecution of the eventual German aeroplanes."

An official telegram from Petrograd arrived at Copenhagen, Monday 7th, tells among others:—"The Russian troops have among the rivers Weichsel and Bug beaten and persecuted the 15th Austrian division in the time from August 28th to September 4th. In these fights the Russians have taken 3 banners, 23 cannons, 18 mitrailleuses, 2 aeroplanes, 150 officers, and 12,000 soldiers."

Our correspondent at Berlin wires Monday 7th:—"To-day the German aeroplanes dropped bombs over Ghent; the inhabitants flew to Ostend."

The German newspaper, "Kolnische Zeitung," writes Tuesday 8th:—"An aviator from the third halting-place for aeroplanes of the third German Army announce that 10 French biplanes and 20 Deperdussin monoplanes have been taken by the Germans, together with several Gnome and Le Rhone engines." This hinges on the Aerodrome de Champagne by Reims, formerly possessed by the deceiver A. Deperdussin, where the Gordon-Bennett aeroplane race was held in 1913,

and not as the newspaper tells the Military aerodrome. The last note is given by me (E. H.) who witnessed the Gordon-Bennett race by Reims. The aerodrome is the best in France, as big as the Hendon one, with about 50 hangars belonging to the Deperdussin factory.

The German newspaper, "Munchener Neuerster Nachrichten," writes September 8th:—The big 42-cm mortars have projectiles of 3 feet length, and the French block fort Manonviller was shot down in one day and a half with 120 shots, and that from a distance of 8 miles! Those who fired, did not see their mark, as mountains lay between; they only measured on the maps, and were then conducted by the observer from a Parseval-Siegsfeld kite-balloon. He noticed the result of every shot, and in a very short time every shot got a hit. Two mortars shot with intervals of 10 minutes, that is, one shot every 5 minutes, and the price of a shot is £1,700.

Daily flights are made in Denmark by the Army and Naval officers on the Henri and Maurice Farman and Caudron bi-planes, and the Leveque flying boats, and at the Copenhagen Naval fort Charlottenlund manoeuvres are made with the Parseval-Siegsfeld kite-balloon.—H.

A Danish physician contributes an article to a Munich medical weekly quoting the authority of Johannes Volkmann, a German Army surgeon at the front, for the assertion that arrows have been used effectively by Allied aviators. Two airmen flew over a German regiment at the frontier, at a height of 5,000 feet, and dropped a shower of arrows as the soldiers were in camp, killing and injuring 13 soldiers. The arrows were made of steel, and were not poisoned. [The use of these steel arrows, which are dropped in batches of 500, has already been described in this paper.—ED.]

Holland and the War.

The following letter has been received from a Dutch reader of THE AEROPLANE:—

"Sir,—Since the last weeks your paper seems to be incomplete if it does not contain some notes by the Editor on the supposed pro-German feelings in Holland. It is to be regretted that a paper which must be considered as one of the leading aeronautical papers, and perhaps is the most interesting aeronautical publication in the world, lends itself to such a misleading and absolutely baseless campaign against a nation which tries by all possible means to defend her neutrality, though this is perhaps more difficult than killing the enemy.

"Being of Dutch nationality, I should like to state that the number of pro-Germans in Holland is undoubtedly very small and that the feelings of the Dutch as a nation are entirely with our friends the Belgians, as at the beginning of the war Mr. Troelstra, the leader of the Socialists in our House of Commons, stated, and with which statement all the other political parties heartily agreed. So there need not be the slightest doubt that Holland is not pro-German, though the German Press tries by all possible means to influence the Dutch Press in favour of that country. Fortunately the effect of that campaign is in Holland the same as it is in America and other neutral States. German cruelties in Belgium and France are sufficient to destroy all pro-German feelings, and not the least in Holland, where thousands of Belgian refugees find at present a peaceful home.

"There is still another remark to be made on your small notes. Several times we could read that the "stolid Dutch (page 242) apparently are by no means hostile to the Germans, and do not in the least mind having their neutrality violated by the passing of German airships (page 222). This remark was made in connection with the dropping of bombs over Antwerp by a naval Zeppelin. Why there is any reason to suppose that the airship must have crossed over Holland in order to reach Antwerp is not clear, as it was well known that a naval Zeppelin had recently been stationed at Köln and that there are several more airship sheds along the Belgian frontier. Moreover, your paper has duly reported that a Zeppelin which actually crossed the Dutch frontier was fired at by Dutch troops near Zevenaer, as soon as it was perceived. At the time of the bomb-dropping over Antwerp no Zeppelin was seen over Holland.

"The reports in your own paper have given sufficient proof that the Dutch do everything to prevent violation of their territory, as you state on page 181, that two German pilots who had to descend at Schiermannikoog owing to engine trouble were disarmed and interned; and on page 201, that a Dutch frontier guard fired on a German aviation officer, struck the aeroplane, which had to descend, while the German officer was disarmed and arrested. So the reports in your own paper give sufficient proof that your statement that the Dutch do not oppose the violation of her territory is untrue.

"What is then the reason that you repeat that story in every copy of your paper? I have tried to give you some ideas on the non-existence of pro-German feelings in Holland and the trouble we give us to remain neutral. Though I fear that it will be difficult to change your mind, I hope at least that you



A BRITISH AERO-ENGINE SHOP.—The erecting shop of the Sunbeam Works, which is now turning out quantities of high-powered Sunbeam engines to Mr. Louis Coatalen's designs, for seaplanes.

will mention in your paper a Dutchman's protest against the misleading statements concerning his country.—(Signed) JAN SCHIERE, Ingénieur diplômé de l'Ecole Supérieure d'Aéronautique de Paris."

[It is of great interest to read Mijnheer Schiere's views on this subject, for they show that many Dutchmen recognise the justice of the Allies' cause. The writer has had the honour of knowing many Dutchmen intimately and can say that there are no better men living. It is, however, to be regretted that the Dutch nation, as a nation, has not helped more actively in crushing German Militarism, and that Holland still permits herself to be used as a port of entry for German supplies. As to the German airships passing over Holland, it is true that in the cases mentioned the Dutch have acted very correctly, but one has heard nothing from Amsterdam of official protests to Berlin against such infringements of neutrality. The Zeppelin which passed over Antwerp drifted down wind from a direction which apparently involved passing over Dutch ground to get there. One hopes, ere long, to hear of the Dutch joining the Belgians in the fight for freedom, for the Dutch Army would be of high value. If Germany is not crushed now, Holland will become a German province in due course. If Holland simply remains neutral she will gain nothing. If Holland comes in with us she will be the richer by the East Frisian country which is hers by right.—Ed.]

Sergeant Munchausen, R.E.

The following story from the "Bradford Daily Telegraph" is far too good to be withheld from a still wider public. It was told by a returned soldier, and the local reporter gives it thus:—

Sergeant Charlie Taylor, who went through the South African War with the Royal Engineers, resides in the little village of Wilsden, between Bradford and Bingley, and he is spending a well deserved week-end's rest, having come over to England in charge of 500 German prisoners of war.

When the present war broke out he was called up with the reserves, and he was immediately attached to the airship squadron of the Royal Flying Corps. He accompanied the Expeditionary Force to the front, and has been fully engaged in air scouting up to three weeks ago, when he met with a serious accident.

It was in the retirement of the Allied forces that the disaster occurred. Describing the affair to a "Telegraph" representative yesterday, Sergeant Taylor said, "Our ship left the Havre base as usual at dusk, for a reconnoitre of the war area. There were eight of us aboard. When we reached an altitude of 200 feet the enemy opened fire on us from their guns.

"One of the sections of the envelope was shattered, but that did not affect the stability of the ship, and we continued to rise. The Germans, however, found the range again, and two other sections were destroyed. This was too much for the ship, and she began to lose her balance. Reeling and rolling like a drunken man she became unmanageable, and came down with a crash. Five of our men were killed and three of us escaped with rather serious injuries."

Sergeant Taylor was picked up in an unconscious state from underneath the broken envelope and conveyed to the military hospital. It was there found that his right side was paralysed, but he has made satisfactory progress, and on Thursday last he was able to leave hospital to bring home 500 German prisoners to Farnborough. His right hand is still disabled, but he is going back to-morrow, because, as he remarked, "I can still do my work with my left hand."

Some idea of the disaster may be gathered from the statement of Taylor that when he came out of hospital he saw the wrecked ship still embedded five feet in the ground.

But this experience was regarded as quite in the ordinary run of warfare, and the Wilsden hero is anxious to get back again to be of service to the headquarters staff.

Very little information has been allowed to come through of the doings of British airmen, and it may be reassuring to know that our forces at the front have quite an efficient staff of air scouts, and a full battalion of airships and aeroplanes.

England is not behind even Germany, with her boasted Zeppelins, for our airships possess all the fighting qualities known in modern warfare. Each ship carries an efficient staff of engineers with three guns, a wireless installation, and a powerful searchlight over six feet in diameter.

Sergeant Taylor stated that they usually went up in the evening at dusk, and at an altitude of 2,000 feet traversed the whole of the fighting line, a distance of about 150 miles, in two hours and a half. Their ship was capable of a speed between 70 and 80 miles an hour. Judged from above the great armies of the Germans appear as big black spots on the earth. They move in large numbers, and are easily discernible. Immediately they bring the powerful searchlight to bear upon them they attempt to find the range, but the ship continues unheeded. "Of course," Sergeant Taylor added, "we do not keep the lights on too long."

[Sergeant Taylor has evidently missed his vocation. He ought to be employed in the Official Press Bureau, to concoct stories for the benefit of the German Press. The idea of a Sapper Reservist being attached "at once" to the R.F.C. is comic enough, but the idea of an airship leaving Havre and being fired at by German guns as soon as she reached 200 feet, is funnier still, partly because the Germans never even saw Havre, and partly because the Army has no airships. The "word-picture" of the wreck of the airship is nearly worthy of Mr. H. G. Wells. Bradford readers may like to pass on to the editor of their local paper the information that the British Army does not use airships, and, secondly, that the fastest airship in the world (our Naval Airship No. 3) does less than 55 miles an hour.—Ed.]

The Defence of London.

The following official statement was issued by the Press Bureau on September 16th:—

"In view of the known power and range of the modern Zeppelins, the Commissioner of the Metropolitan Police is advised by the Air Department of the Admiralty that it is desirable to continue for the present the diminution of lighting in streets and shops in London.

"An airship will be sent on several nights to examine London from above, but some time may be required for this to be carried out satisfactorily, as nights vary in intensity of darkness.

"As a result of this examination it is hoped to be able to modify certain existing restrictions. In the meantime it is necessary in the public interest that the reduction in the illumination of streets and shops be maintained."

The persistence of the defenders of London in working their searchlights on the look out for Zeppelins is particularly commendable, though during such weather as that of last week it appeared something of a work of supererogation. The wind, which till Thursday night blew solidly from the west, was certainly 30 m.p.h. on the ground at night, and at a height of a couple of thousand feet it was probably doing at least 50 m.p.h. Allowing that the speed of the best Zeppelins is 54 m.p.h., which is fairly well the outside limit, it would therefore be possible for one to forge ahead at four miles per hour from Cologne to London. The distance is about 320 miles, so that the distance could have been covered in 80 hours, in which case an airship leaving some time on Sunday afternoon might quite possibly have arrived on Thursday night!! She would, of course, have had to come down in Belgium for fuel several times, as the maximum fuel capacity at full speed is something like 20 hours, and her speed might have been greater at times, especially if a tow could have been arranged by traction engine across Belgium. Still, one never knows, and it's just as well to be on the safe side.

Appropos the inspection of London's lights and its general topography by night, Mr. R. McGeagh Hurst makes the eminently sensible suggestion that instead of erecting a dummy St. Paul's by the Serpentine we should erect one over the Albert Memorial in Kensington Gardens and so arrange the surrounding lights that it would at once attract attention. In this way any casual Zeppelin might be turned to good use, in that it might be induced to destroy an edifice which is an outrage against artistic taste, and which we are never likely to be rid of in any other way.

ACCELERATED AEROPLANE PRODUCTION.

Some two years or thereabouts ago it happened that some person or persons unknown was or were inspired to run a motor 'bus service from London to Edgware and district, and by some extraordinary stroke of luck it happened that they fixed upon a site close to Colindale Avenue, Hendon, for their garage. As a result a building was put up which comes as near being an ideal aeroplane factory as anything I have yet seen.

It is situated right against a main thoroughfare so that motor lorries of the largest size can take their load in and out without trouble. It is also so close to the London Aerodrome at Hendon that aeroplanes can be transported with everything in position on open lorries and assembled in sheds at the aerodrome without the trouble of packing them properly for transport. And yet it is so far away from the aerodrome that the men in the factory are in no way disturbed by the flying which goes on in the aerodrome itself.

Some few months ago the particular 'bus firm using this garage amalgamated with a bigger concern and their 'busses were sent to roost somewhere else at night. Thereupon Mr. Holt Thomas, the chief of the Aircraft Manufacturing Company, Limited, who has shown himself, ever since he began to take a hand in the aeroplane business, one of the shrewdest business men who have yet had anything to do with the industry, promptly took over the garage as a factory. Anyone who has watched the progress of our industry at all closely must have noticed that, unlike many people, Mr. Holt Thomas, when he has made up his mind that a certain course is the right one, does not hesitate to invest boldly in the future of his enterprises. The average cautious English business man would have thought it a risky speculation to have tackled aeroplane building at all. This is probably why the aeroplane business has, with a few remarkable exceptions, been so badly financed up to the present. But Mr. Holt Thomas has always had faith in his own foresight, and his foresight has always been justified in its results, so that what would in many others be a pure gamble, in his case becomes an ordinary business investment.

He started by buying French Farmans, both Henri and Maurice, and selling them to the Government, and, at the same time, started making British-built machines in the sheds at Hendon. Then he acquired the rights of the Gnome engine and sold this engine also. Thereon he formed the Aircraft Manufacturing Company, Ltd., and the Gnome Engine Company, both of which concerns are now established on a thoroughly sound basis.

Then new works were started at Merton, where by degrees more and more parts were made, and now machines are being made from start to finish in the new works at Hendon. Naturally, owing to the present state of affairs the demand for aeroplanes is growing with disconcerting suddenness, but the Aircraft Company, thanks to the foresight of its principal, finds itself better situated to deal with the demand than almost any other aeroplane firm in the country.

Some few days ago, when calling on the officers who had been installed by the Admiralty to examine Air Mechanics at the Aircraft Company's premises, I had the opportunity of seeing something of the firm's works. I believe the correct phrase under these circumstances is to describe the factory as being a "hive of industry." Certainly the description is a mild one when applied to the Hendon works.

The first thing that struck me on entering the door was a large printed notice which read as follows:—

NOTICE.

At this stage, when immediate delivery of aeroplanes and parts is an absolute necessity, I hardly think it is necessary to appeal to the loyal assistance of our men, but I would remind them that at any time the possession of one of our machines may mean the winning or losing of a battle.

EVERY MAN WORKING FOR THE AIRCRAFT COMPANY IS WORKING FOR HIS COUNTRY.

I hope and believe that every man will put his BEST WORK and his QUICKEST WORK into everything he does, with the knowledge that the immediate delivery of machines, and parts, is of great importance to the country.

The staff will be considerably increased and extra hours will have to be worked. Our old employees can give enormous assistance by helping the new hands, and the new hands can help by learning as quickly as they can.

I feel that I can rely on the loyal assistance of all to see that, in working at high pressure, every precaution will be taken to ensure the good work hitherto obtained.

The Government look for our support, and that support must come from every man throughout this business. I know I can rely on getting it.

G. HOLT THOMAS.

This notice, I feel fairly sure, has a good deal to do with the earnest way in which the crowds of men were working. It struck me too, looking at the intelligent expression of the workers, that the firm has succeeded in getting hold of a particularly good class of workman, which, is of course, highly desirable in such important, and frequently delicate, work as aeroplane building.

Like wise people, the Aircraft Company, when the rush arrived, did not attempt to accelerate production by overcrowding their own works with men. They have instead put on double shifts in certain departments, which run night and day, and have put out certain parts to be made by other firms. The parts to be made outside have been very skilfully selected so that there is no chance of the outside firm making any mistake in a matter which requires intimate knowledge of aeroplane construction.

All parts which require special technical knowledge, such as the making of spars and struts, and, in fact, the wood-work in general where wood not only has to be carefully selected, but where certain pieces of wood are indicated to the experienced eye as being only suitable for certain parts of the machine, are made in the works. The more ordinary metal fittings can be made outside and the more complicated ones may also be partially made outside, and finished in the firm's works.

The arrangement seems to operate admirably, for in spite of the pressure neither the actual workmanship in the machines nor the finish is allowed to suffer in any way. On this matter of internal finish I ventured to suggest to Mr. Holt Thomas, and Mr. Clement Greswell, the manager of the flying side of the business, that it almost seemed as if too much work was put into the finish of internal parts, such as wing spars and ribs, but on second thoughts I was compelled to agree with Mr. Greswell when he pointed out that if a machine had a slight accident which broke up a wing, and the pilots who used these machines saw that the internal work was rough, it would be quite likely that it would decrease their confidence in the machine as a whole. It is naturally hard to distinguish work that is simply left rough for the purpose of accelerating production, without in the least decreasing the quality of the machine, from work that is left rough by a bad workman, and even in the present rush careful internal work probably makes for higher quality throughout the machine, and therefore it is probably better that the same degree of internal finish should still be insisted upon as at any other time.

Judging by all the parts I saw in the works and by the way in which the men were working on them, it certainly appears as if any man in the place could answer in the affirmative to the question I suggested a week or two ago that each workman should ask himself, namely, "Would you care to trust your own life to this job?" Incidentally I would draw attention for the benefit of the "Trade" to a remark Mr. Holt Thomas quoted from a notice in the Astra works, in Paris—"One cannot help making mistakes, but the man who conceals a mistake in aeronautical work is a criminal."

Perhaps under existing circumstances it would be unwise to indicate what the output of the factory is at the present moment, and I can therefore only say that anyone visiting Hendon at any time will probably find that a Farman has either just left for delivery to the Army or is just going to leave, or is just being assembled for test.

Where other firms have been for years frittering away thousands of pounds on futile experiments, many of which any person with common sense would have condemned instantly as pre-ordained to failure, the Aircraft Company simply started out

to build aeroplanes of proved ability, with the result that our Army to-day has a very much better supply of machines than it would otherwise have had.

From time to time I have in this paper ventured to criticise Farman machines, but it has only been because I have been anxious to see still further progress made in aeroplane design. Of their type the Farmans that are made in France or at Hendon remain in the very first rank, and as I have often said, I would rather trust myself on a real flying machine with the engine behind, which is properly built, than on a machine with the engine in front which was merely a promising experiment, though on some points it might have great possibilities. In proof thereof, I may say that, though I do not pose as having done a vast amount of flying, nearly all the flying I have done has been on Farmans or on machines of the Farman type.

I gather that the Aircraft Company do not regard any aeroplane of to-day as the ultimate development of aircraft, and I trust when the present demand and the present war together come to a satisfactory conclusion the Aircraft Company may reap its just financial reward and may produce on its own account a machine which will prove at least one step nearer perfection. There is certainly no firm in the trade better equipped to produce such a machine. Mr. Geoffrey de Havilland, who is now with the Aircraft Company, is fairly sure to produce designs of high merit.—C. G. G.

A New Aviation School.

The London and Provincial Aviation Co. have just opened an aviation school at Hendon on a plan which has distinct prospects of success. The proprietors fully appreciate that the first desideratum of a practical flying school is unstinted and uninterrupted practice for the pupils, and the whole organisation has been conceived with this object in view. The first instructional unit when complete is to consist of two 35-h.p. biplanes and one 45-h.p. biplane, the parts of which are absolutely standardised, and each machine has a complete set of spare parts. The two 35-h.p. machines will be in general use, and the 45-h.p. craft will act as a standby, and as a post-brevet machine.

In general appearance and principle the machines are of the well-known Caudron type, but Mr. W. T. Warren has incorporated many devices of his own, all leading to one end—rapidity in repair and replacement. Steel clips and lugs are used everywhere, and there is not an aluminium joint in the machines. All the fittings are made on the premises by an experienced staff, and the accuracy with which ribs, struts and sockets fit their templates is remarkable. This universal duplication of parts naturally means a great deal of preliminary labour and considerable expense, but the firm look with confidence to the result, for it means that the most hopeless looking smash can be converted into a new machine in a few hours, to the mutual advantage of principals and pupils. The wings of the machine are extremely flexible, and the peculiar design of the ribs carries the flexure well to the front of the rear spar, which adds to controllability in bumpy weather. The nacelles have been carefully designed with regard to the comfort of the pilot, and the elimination of unnecessary wires—a very important feature.

At the time the writer called, the first 35-h.p. biplane was in flying order, and its set of spares complete, and the second machine was well on its way to completion. In fact, by the time these notes appear it may have flown. School work has already commenced, and pupils have done rolling practice in winds up to 20 m.p.h. The chief pilot of the firm has tested the machine in full flight, and her climbing powers are highly satisfactory.

The London and Provincial Aviation Co. feel confident that when a pupil climbs into their machines knowing that he will not be regarded as the *bête noire* of the whole school for a week if he does happen to land heavily, he will stand far more chance of getting through without a breakage of any kind, than did the unhappy wight who before starting on his first turn, was solemnly assured by the other nine pupils that if he smashed the "bus" they would kick him all round. He duly started his turn, and through pure nervousness completely wrecked the only box-kite, and when he emerged minus a

tooth and with several nasty cuts, he was not actually kicked, but was violently abused by the rest. Such internecine strife need not be feared at the L. and P. school.

As soon as the instructional machines are complete, a high-powered passenger machine is to be built on very original lines, of which it is not permissible to speak at the moment. In the meantime, Messrs. Lindsay, Smiles and Warren, the personnel of the firm, are to be congratulated on their enterprise in creating a school which offers so many advantages.—W. L. W.

An Amende.

Owing to an unfortunate error in transcription, the paragraph from the "Daily Telegraph" paying a high tribute to the late Mr. Richard Gates was ascribed to the "Times." The paragraph in question was written by Mr. J. H. Ledeboer, the editor of our monthly contemporary "Aeronautics," who is the regular aeronautical correspondent of the "Telegraph." Mr. Ledeboer knew Mr. Gates intimately, and the touching reference he makes to the loss we have all suffered shows how highly our dead friend was esteemed by all those who were privileged to count themselves among his friends.

Photographs.

The photographs of the late Flight-Lieut. Richard T. Gates, which appeared last week, and of Lieut. Waterfall, which appears this week, were taken by Mr. F. N. Birkett, 97, Percy Road, Shepherd's Bush, W., and friends of these officers can obtain copies from him.

Viewers.

The Editor desires to thank the numerous applicants who have replied to the paragraph in last week's issue referring to vacancies for viewers. The number of replies is far too great to permit of each one being answered separately, but the best of the applications have been submitted to the right quarters, and the writers of those which seem most promising will doubtless receive communications in due course.

Apropos replies to applications for employment, several letters have been received at this office complaining that the writers have received no replies to their applications for jobs as mechanics in the R.N.A.S. Perhaps the writers of those letters will try and get into their heads the fact that the officers in charge of all departments of the King's Services dealing with enlistment are a great deal too busy selecting and examining men and sending them off to headquarters to be able to waste the nation's time writing letters to those who do not appear suitable. It is not lack of courtesy which prevents replies being sent, but simply lack of time.—C. G. G.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Gale	Gale	Windy	Gale	Gale	Windy	Wet
East Coast ...	Windy	Windy	Windy	Wet	Windy	Windy	Windy
South Coast ...	Show's	Rain	Du'l	Fine	Rain	Fine	Rain

Hendon.—AT GRAHAME-WHITE SCHOOL.—Instrs.: Messrs. Russell and Winter. Pupils with instr.: Flight Sub-Lieuts. Giles, England, Groves, Hart, Allen, Rosher, Haines, Perry, Ffield, and Riggall, Messrs. Polehampton, Carabajal, Easter, Stalker and Morgan. Strts.: Flight Sub-Lieuts. Rosher and Allen and Mr. Wiles. 8's or circs. alone: Mr. Wiles and Flight Sub-Lieut. Strong—all on G.-W. biplanes.

AT HALL SCHOOL.—Instrs.: Messrs. Lawrence Hall and E. Cini. Straights: Mr. Brynildsen (12 mins.), Mr. Rose (6). Machines: 2 Caudron biplanes.

AT BRITISH CAUDRON SCHOOL.—Instrs.: Messrs. R. De-soutter and R. M. Murray. Strts. or rolls alone: Messrs. Barfield, Legh, Ivermee, Moon, Henderson, and Dr. Christie rolling; Mr. Abbott strts. On two Caudron biplanes, 35-h.p.

AT LONDON AND PROVINCIAL AVIATION Co.—Wednesday 16th, Mr. W. T. Warren out testing new School biplane, 35-h.p. Anzani. Test lasting fifteen minutes, reaching four hundred feet, and machine climbing very well indeed. Messrs. W. White and C. L. Davidson, new pupils, rolling practice for half an hour, both doing well. Mr. M. G. Smiles (late G.-W. School), straights.

MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. **MONDAY** to ensure insertion. For the convenience of Advertisers, replies can be received at the office of **THE AEROPLANE**, 166, Piccadilly, W. **Special PREPAID Rate**—18 words **1/6**; Situations Wanted **ONLY**—18 words **1** - . 1d. per word after.

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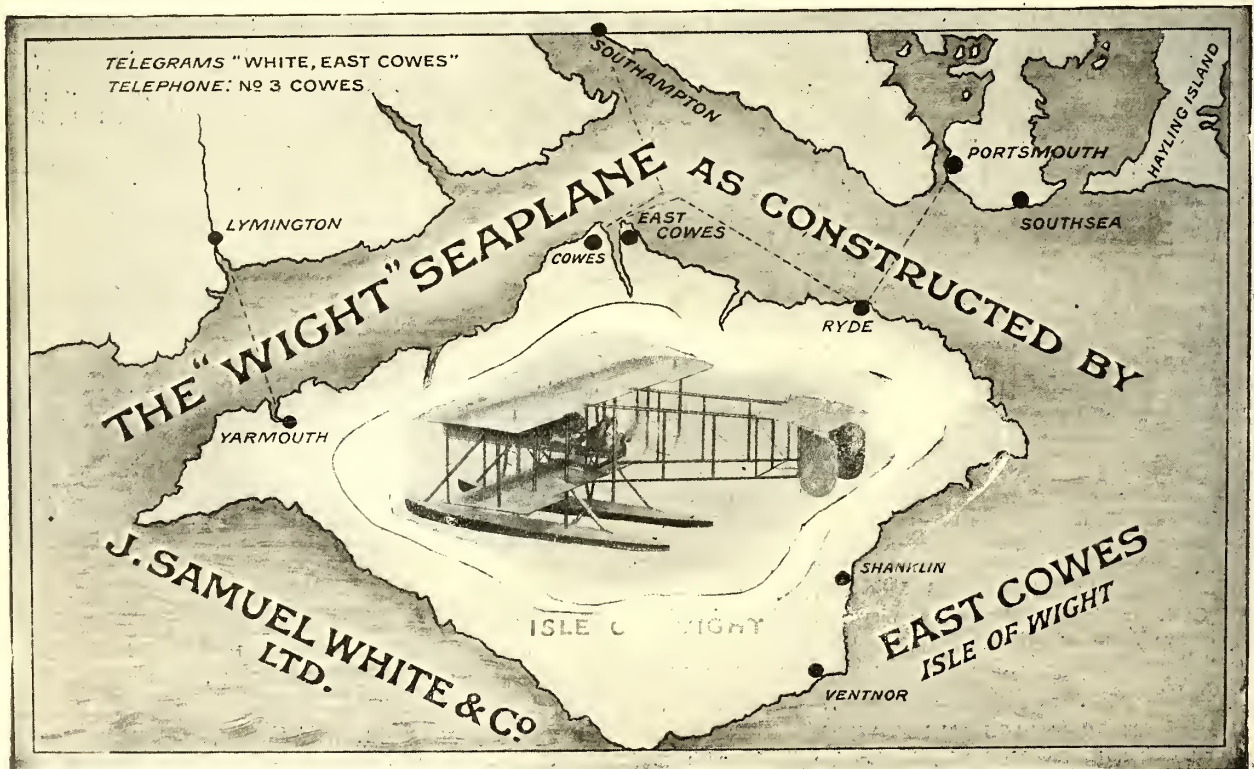
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"THE AEROPLANE," SEPTEMBER 30, 1914.

THE AEROPLANE



Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.
AS A NEWSPAPER.]

WEDNESDAY, SEPTEMBER 30, 1914.

No. 14

IN FRANCE.



Above, a "B.E." biplane about to start from a French air station. Below, Captain Oswald Watt (Chef d'Escadrille No. 30, de l'Aéronautique Militaire) and Mr. Wallace Barr, about to start on a tandem Blériot. Both taken near Paris last week.

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Man's Inhumanity to Man.

Some few days ago, having a few minutes to spare, I found time to read a little book entitled "The Essays of an Aviator." It is a little book in size only. In other ways it is a great book. The essays appeared one at a time in our monthly contemporary "Aeronautics." They were, and are, published anonymously, and one can only guess at the author's name. The fly-leaf informs me that only 300 copies of the book have been printed and that my copy is No. 30. Also, no price is mentioned for the other two hundred and ninety-nine copies, so one assumes they are priceless—in which estimate I agree. However, I strongly recommend the author to produce a cheaply printed edition at sixpence, as a benefaction to his fellow aviators.

It would be unfair to print one's guesses at the author's name, but it is evident that his personal experiences go back to the dark ages of aeronautics, and that he knows more than a little about Service aviation, and that he is a practical flier to-day. I think I am right in saying that in this book he is the first person to produce literature on aviation, as distinct from mere journalism, or the compilation of text-books or stories.

At the very end of the book the author discourses of War. After sundry delicately humorous remarks on the subject, he says seriously, "In prostituting a splendid thing like flying to the purposes of War we are in the position of a man who only sees a diamond as a convenient tool for cutting glass." He is absolutely right—in so far as aviation is regarded by most people as having no value apart from the Services.

He continues:—"Fighting in the air is perhaps the most ridiculous feature of a comic business. I am somewhat loth to say much about it, as it is rather popular among important people like novelists and members of Parliament. . . . There is, let me add, a very personal side to these remarks. I myself have no wish to flit about with bombs and an automatic gun trying to damage fellow-aviators. I have too much respect for them. I should also regard it as distinctly unsportsmanlike if any one flew at me with hostile intentions. . . . So far we have got nothing out of flying but death, and shares that do not pay a dividend. . . . I have already proposed in a previous essay that Art may give us an intellectual return for our money. Commerce, on the other hand, will pay us kind for kind, and cent. per cent. Besides, War is a silly game anyway."

Some day, if the author of these essays is not irretrievably damaged while flying on Service, I hope he will give us his views on the coming of the Commercial Aeroplane. Certainly few people are as well fitted to do so, for very few combine his intimate knowledge of military aviation with practical common sense and poetic breadth of vision. Meantime the country is at war, and because "war is a silly game anyway," we want to get it over as soon as possible. This war had to come, and it will not be the last—it is pure foolishness to call it "Armageddon"—and, because it had to come, this paper, which was originally devoted to the peaceful development of aviation, changed its policy completely and became a militarist publication, much to the disgust of many of its pacific early readers. Whether that change, and the agitation directed from this office in favour of an adequate supply of military aeroplanes, and of the establishment of a healthy aeroplane industry, were justified or not, the readers of this paper can judge for themselves in the light of present events.

One had to be very blind not to see this war coming. It was simply a logical sequence, and as easy to foresee as was the coming of the tractor biplane as the successor to the box-kite, and its extinction in turn by the twin-engined, fuselage-body "pusher" biplane, which is being built in ones and twos where it ought to be built in hundreds for the great invasion of Germany next year—provided Germany is not burst up by a Socialist revolution brought on by starvation during the winter. Unfortunately, the Royal Aircraft Factory has not yet produced a twin "pusher," so presumably none will be ordered by the War Office, though the Admiralty may move more rapidly in this direction.

A Silly Game.

Meantime, the silliest, or in other words, the most inhuman, thing in the silly game of war is the idea of conducting war on humane principles. A very dear pacifist friend of mine, discussing the silliness of war, remarked that when the war is all over and hundreds of thousands of able-bodied young men have been sent out of the world, and millions of the unfit have been left behind to propagate the species, a dozen or so of elderly gentlemen will meet round a table to reconstruct the map of the World. He wanted to know why they could not meet round the same table before war began, and draw new maps then. The answer is the very simple one, that humanity is no further advanced now than it was a thousand, or two thousand, or three thousand years ago. Weapons have changed, and we have greater facilities for locomotion—that is why five or six millions of men are fighting on the ground where five or six hundred thousand fought a hundred years ago. But we are not a bit more civilised.

The Greeks and Persians, the Romans and Huns, the Spaniards and Moors, were just as savage and just as chivalrous, just as honourable and just as treacherous on both sides as are the men who are fighting to-day. Any contemporary history proves it. The proportion of men killed in action is a good deal lower now than it was in the days of hand-to-hand combat, and the percentage of deaths from wounds and disease are lower still, but otherwise there is little change. Formerly rumour on each side told non-combatants that the fighting men on the other side were cannibals; to-day the newspapers on either side lie with equal fluency and zeal in the hopes of stirring up a sufficiently hostile feeling to aid recruiting, or to inspire conscripts with the proper death or glory spirit.

A Great Author.

Only one great writer of English has been produced in this war, and that is the anonymous Staff officer who composes the despatches from our Headquarters. The man who can interpolate into a momentous document the phrase, "there is more than a distinct feeling of autumn in the air, especially in the early mornings," is an artist. That note brings home to one the idea that even the General Staff is human, and it will do more to produce warm clothing for the troops than all the sentimentality of the halfpenny press. One pictures the Staff officer coming out in the gray dawn from a cosily warm, if somewhat frowsy and overcrowded billet in a village inn, and getting into an open car to be whirled off for miles to the quarters of some General of Division by a hollow-eyed, grubby-faced driver who was once in the dim past of six weeks ago a young nut who lounged along Piccadilly in a big Rolls-Royce. It is then the Staff officer feels the chill and

sympathises with the mud-crusher who has slept peacefully in the wet after a six-hours' fight and a twelve-hours' march.

Another illuminating passage from this anonymous author says, "The Germans are a formidable enemy. Well trained, long-prepared, and brave, their soldiers are carrying on the contest with skill and valour. Nevertheless, they are fighting to win anyhow, regardless of all the rules of fair play, and there is evidence that they do not hesitate at anything in order to gain victory. A large number of the tales of their misbehaviour are exaggerations, and some of the stringent precautions they have taken to guard themselves against the inhabitants of the areas traversed are possibly justifiable measures of war. But at the same time it has been definitely established that they have committed atrocities on many occasions, and they have been guilty of brutal conduct." There you have the whole German army summed up in a literary tabloid, and, at the risk of being set down as a pro-German, I say that any other huge army engaged in an aggressive war would be liable to the same description.

Our Well-Behaved Army.

Our own little army certainly behaves better, though it must be remembered that during the Boer War our men in South Africa were charged in all the Continental papers with outrages on human beings quite equal to those now put down to German savagery. The reason why the British Expeditionary Force is better behaved is, firstly, that it is a volunteer army, carefully drilled and educated after enlistment, and, above all, it is officered by gentlemen. During the past ten years the mental, and consequently the moral, standard of our army has been raised higher than ever, so that one hardly ever sees a drunken soldier in the streets, and the old brutal fights with belts and boots are, I hear, very rare. Still, one does hear even now of an occasional regrettable incident, even among officers.

There occurs to one the case of a certain officer who only a few years ago was taking some troops through a village in a certain manoeuvre area. He sent a messenger to order all the public houses to be closed—perhaps a necessary order, but one which cast a doubt on the discipline of the troops. One public house was found open. He entered it himself, hauled the publican out with the lash of his riding whip round the man's neck like a noose, and then thrashed him in the street. After which he broke the bicycle of a bystander who made remarks on his conduct. A year afterwards I saw the same officer still in uniform.

That officer, thank goodness, was a very ignoble exception among the finest officer class in the world, but change conditions, put that same man into a hostile country in time of war, and can one suppose that he would stop at horse-whipping and breaking bicycles?

Further, let it be remembered that a conscript army includes all grades of the population, including a number of born criminals, and those of badly-balanced mind whom the stress of war will certainly transform into criminal lunatics. I see no reason to suppose that the lowest grade German is any worse than the Parisian apache, or the London hooligan, and one must remember that "Jack the Ripper" was an English institution.

Our "genteel" newspapers do not publish the filthier details of the criminal courts, and consequently the fairly well-to-do middle classes of this country believe that the coarser kind of crime is non-existent in this country and in "civilised" Europe. Therefore it comes as something of a shock to find that German workmen when put into uniform are capable of outrages which those who have led the sheltered life fondly believed to be the national characteristics of Turks, Kurds, and the wilder inhabitants of the Balkan States and the distant parts of Russia. Unhappily brutal murders of defenceless people of both sexes and all ages, and outrages on women, are comparatively common in all countries in time of peace, and it is only natural that the number should increase in a hostile country in time of war. Also, every outrage by German troops is reported over and over again, and becomes twenty outrages instead of one, where one alone would be bad enough. Even the official Belgian enquiry only reports three or four authenticated outrages on women.

If, instead of having a volunteer army, we impressed an equal number of men simply as a percentage of the able-bodied male population, we should probably find we possessed as high a percentage of criminals in the ranks as any other army. As it is, we enlist picked men, raise their tone by putting them under officers of very high class, and leave the criminals and wasters at home to be a nuisance to the police instead of sending a fair proportion of them out to be shot at.

This is one of the most gorgeous examples of the working of that peculiarly English product, the state of mind which is known as "The Nonconformist Conscience." If our losses in the field are proportionate to those of the other armies it simply means that we lose more valuable men than they do, instead of disposing comfortably of a proportion of our wasters. A volunteer army has its advantages when one needs a few plucky and clever men to conquer a savage country, but it is a ghastly mistake when the whole nation is fighting for its life as we are doing now.

The Need for Conscription.

Conscription here and now is the only proper thing for this country. Lord Kitchener's new army is chiefly made up of decently educated young men, clerks, artisans, and so forth, from our big cities. The labouring classes are not enlisting rapidly, and the authorities are not going the right way to get them. The efforts of the much puffed Army Advertising Department are too puerile for words.

Our "Public Schools" Corps and "City" battalions are sheer waste of good material. All those public school men ought to be in training as officers for battalion after battalion of pressed men from the mass of unskilled labourers, and the city clerks and intelligent artisans should be trained as N.C.O.s. They are far too good to be pushed into the fighting line as masses of infantry.

Go through London to-day and one hardly sees a young man of the officer class who is out of uniform, and even able-bodied youngsters of the classes just below are scarce; but go into the Provinces and one sees literally millions of men who would make good infantry soldiers either lounging about or working short time in factories. If this war is prolonged we shall wipe out the men who are fit to become officers as surely as the French wiped out their aristocracy during the Revolution. The Napoleonic wars killed off the natural-born officers who sprang from the French middle classes, and to-day, as in 1870, the French private soldier is suffering heavily for lack of a born and bred fighting aristocracy to lead him. The French have some few good officers, but only when the war is over will it be possible to show what harm has been done by the presence of the mercenary French bourgeois in the uniform of an officer—sometimes of very high rank.

The Inhumanity of Mercy.

There is a famous French picture called "Un Brave," dating from the war of 1870, which shows a peasant kneeling in a village street firing at the head of an advancing column of Germans. Now, that picture probably explains quite a number of the outrages charged against the Germans.

After that man had displayed his bravery the Germans had no option but to burn down the village, simply as a lesson to other villages. Doubtless in the process some people lost their heads, assaulted German soldiers, and were bayoneted for doing so. Doubtless also, some of the criminal element among the troops committed other outrages, and most of them got drunk on what they found before burning the village. It all seems very natural, and it will be most astonishing if the same thing does not occur when the Allies are invading Germany. If the "Brave" had had the sense to keep quiet, or to get into a dead soldier's uniform before firing, all might have been fairly well with the village.

One British paper which has been most virulent about German outrages, and has talked much of the kindness of our Russian Allies in Austria and East Prussia, quite forgot itself the other day and gave, as an amusing story, an account of a Cossack occupation of a German town. It seemed much entertained at the Cossacks' inquisitiveness about the interior of pianos, and spoke of streets white with the keys of broken instruments. Is anyone foolish enough to imagine that the Russians stopped at pianos? The human anatomy is a much

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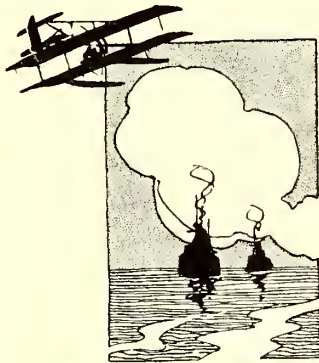
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Killing Without Malice.

Let us adopt the attitude of Cæsar in the following passage from Mr. Shaw's play "Cæsar and Cleopatra":—

RUFIO (a centurion): "Now tell me, if you meet a hungry lion, you will not punish it for wanting to eat you?"

CÆSAR (wondering what he is driving at): "No."

RUFIO: "Nor revenge upon it the blood of those it has already eaten?"

CÆSAR: "No."

RUFIO: "Nor judge it for its guiltiness?"

CÆSAR: "No."

RUFIO: "What, then, will you do to save your life from it?"

CÆSAR (promptly): "Kill it, man, without malice, just as it would kill me."

RUFIO then states that he has killed Cleopatra's head servant Ftatateeta, who hated Cæsar.

RUFIO: "Well! had I not been Cæsar's pupil what pious things might I not have done to that tigress! I might have punished it. I might have avenged Pothinus on it. I might have judged it. But I put all these follies behind me; and, without malice, only cut its throat."

Whereupon CÆSAR replies: "It was well done, Rufio; had you set yourself in the seat of the judge and with hateful ceremonies and appeals to the gods handed that woman over to some hired executioner to be slain before the people in the name of justice, never again would I have touched your hand without a shudder. But this was natural slaying; I feel no horror at it."

This should be the key to our conduct in the rest of the war. Let there be no cant about judgment, no evil sentiments of revenge, but let it be a "natural slaying" of all who stand in our way. The sentimental Englishman has a foolish habit of knocking a man down and then standing back to give his foe a fair chance of hitting back and doing further damage. The practical Irishman, having got a man down, kneels on his chest, takes his head by the two ears and bangs it on the ground till there is no more fight left in him. The Irish way is more effectual and cheaper in the end, even if a trifle brutal. It is our business to see that when Germany does get up after this war, there is no fight left in the country. Anything less than this is inhumane humanity.

Was Duty Done?

It was reported by some papers that in the raid on the Zeppelin sheds last week the section of Naval aviators who went to Cologne found so much fog over the district that they could not see the airship shed, and therefore did not drop their bombs for fear of hitting the town. Knowing several of the officers concerned in this affair I do not believe the story. I fancy that if any of them had seen the spires of Cologne Cathedral above the fog they would have had a shot at it, not as a revenge for Louvain or Reims, not as a judgment on German vandalism, but, quite without malice, merely to impress on Germany that British aviators are to be reckoned with as a striking force.

If any one of those officers did return without dropping his bombs on any visible German town he ought to be promoted one step in rank for his plucky flight and then cashiered for dereliction of duty. We cannot afford to permit acts of mistaken kindness, nor can we afford to waste petrol and risk aeroplanes and pilots on unprofitable ventures. Without malice, we must do as much damage as possible in the quickest and cheapest way. It is more humane in the end.

Misdirected Energy.

As an example of man's inhumanity to man, in quite a different way, it is worth while telling the story of a certain imperturbable squadron commander of the R.F.C.—I do not guarantee its accuracy, but, knowing the officer, it seems probable.

As has been stated in Headquarters dispatches, our aviators are shot at by friend and foe alike, thanks to the lamentable ignorance of French and British soldiers and their officers as to aeroplane design. This officer, having started out from an R.F.C. camp, well behind the firing line, flew straight out climbing steadily. A mile or two away, and at a height of 2,000 feet or so, he passed over some French infantry, who promptly started blazing at him—a singularly inhumane thing to do. Several bullets struck his machine, which so annoyed him that he shut off his engine and glided down right at them, and landed amid a hail of bullets in a field alongside them. To the surprise of the Frenchmen a British officer climbed out of the supposed German machine, brushed aside the soldiers who had run out to arrest him, walked up to the officer commanding the detachment, and, starting with, "I say, damn it all, this isn't good enough!" proceeded to deliver a severe lecture to the O.C. on the foolishness of firing at an aeroplane when he did not know whether it was French, British, or German. It would take more than the average amount of nerve to do this thing, but the effect would be salutary as far as it went. Still, it is astonishing that some proper attempt was not made months ago to teach French and British officers to distinguish one machine from another.

▲ Horrible Suggestion.

The final example of inhumanity—for to-day anyhow—is Mr. H. G. Wells' horrible proposition that there should be an order of knighthood for aviators.

"Every aviator who goes up to fight, I do not mean to reconnoitre, but to fight, will fight all the more gladly with two kindred alternatives in his mind, a knighthood or the prompt payment of a generous life assurance policy to his people. Every man who goes up and destroys either an aeroplane or a Zeppelin in the air should, I hold, have a knighthood if he gets down alive. And, I venture to say that we shall create thereby the most honourable and enviable Order that the world has ever seen."

That is Mr. Wells' idea expressed in an article which contains some sense and a lot of nonsense, culminating with this super-nonsense. There is an old proverb about silk purses and the auricular appendages of feminine pork which makes one fear that Mr. Wells' early days behind a counter lead him to place a false value on a title, despite his own reference to provincial mayors and party helpers. There might be a special clasp to the regulation war medal, or even a special medal, for those who have destroyed an enemy aircraft, but the idea of a title for a job which is all in the day's work is absurd. It is even doubtful whether any special recognition is advisable, for it might lead young and ambitious pilots to neglect their legitimate work of scouting for the more profitable job of chasing hostile aircraft. I am all in favour of a generous pension for the dependents of those killed in action, whether in the air or on the ground, and good service should be rewarded by mention in despatches and special promotion, but the idea of a special title is nauseating. And here I think the best people in the R.F.C. will agree with me.—C. G. G.

Peaceful China.

The degree of Doctor of Science (Engineering) has been conferred on Professor Herbert Chatley, of the Tang Shan Engineering College, North China, by the University of London. His thesis embodied an extensive investigation into the subjects of rolling resistance and convex contact, and the contributions presented in support of his candidature included numerous books and papers, especially referring to aeronautical subjects. Professor Chatley was one of the earliest investigators in this country of the science of aeronautics, and has continued his work in China. He remained there peacefully throughout the Chinese revolution of the last few years, and presumably finds study at present easier in China than in Europe.

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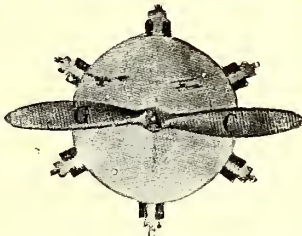
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Naval and Military Aeronautics.

From the "London Gazette," September 22nd, 1914:—
WAR OFFICE, SEPTEMBER 22nd. REGULAR FORCES.
COMMANDS AND STAFF:—

The undermentioned temporary appointment is made: Col. Henry C. L. Holden, C.B., retired pay, to be an assistant director at the War Office, dated August 18, 1914.

ESTABLISHMENTS.—ROYAL FLYING CORPS.—MILITARY WING.—The undermentioned temporary appointments are made. Dated September 12th, 1914:—Flight Commanders: Captain Seaton D. Massy, 29th Punjab, Indian Army; Captain Cuthbert G. Hoare, 39th King George's Own Central India Horse, Indian Army; and Lieutenant Cyril L. N. Newall, 2nd King Edward's Own Gurkha Rifles (the Sirmoor Rifles), Indian Army, and is granted the temporary rank of captain.

SERVICE BATTALIONS.—The undermentioned is granted the temporary rank of captain. Dated September 23rd, 1914: H. E. Walcot, late captain 3rd Battalion the Queen's (Royal West Surrey Regiment).

SPECIAL RESERVE OF OFFICERS.—Royal Flying Corps (Military wing).—The notification which appeared in the "Gazette," dated August 14th, appointing J. C. Miller and M. Dawson Second Lieutenants (on probation), dated August 15, is cancelled.

NAVAL.

The Admiralty announced the following appointments on September 22nd:—

ROYAL NAVAL VOLUNTEER RESERVE.—Messrs. K. Symes, H. Perin, and F. C. H. C. Sinclair have been granted temporary commissions as lieutenants, R.N.V.R., and Messrs. G. C. Williams, W. Wells-Hood, N. Mitchell, and Sir Maxwell Monson have been granted temporary commissions as sub-lieutenants, R.N.V.R., and all appointed to the "Pembroke," additional, for duty in connection with naval air service, to date September 21st.

The following appointments were made at the Admiralty on September 24th:—

Lieutenant C. G. W. Head, to the "Maidstone," additional, for submarines, undated.

Late Lieutenant, R.N., C. Hornby has been entered as flight-lieutenant for temporary service, and appointed to the "Pembroke," additional, for Eastchurch Air Station, to date September 22nd.

The following appointment was made at the Admiralty on September 25th:—

ROYAL NAVAL RESERVE.—Assisting Paymaster W. Hogg, to the "Pembroke," additional, for Naval Air Station, Great Yarmouth, to date September 24th.

The following naval appointments were made at the Admiralty on Saturday, September 26th:—

Lieutenant-Commander F. C. Hallahan, M.V.O., to the "President," additional, as acting commander, for duty in the Air Department, Admiralty, to date September 25th.

Flight-Lieutenant: R. E. C. Peirse, to the "Pembroke," additional, for Eastchurch Flying School, to date September 25th.

Probationary Flight-Sub-Lieutenant E. V. S. Wilberforce, confirmed as flight sub-lieutenant and appointed to the "President," additional, as assistant instructor at the Central Flying School, to date September 25th.

The following appointments were made at the Admiralty on September 28th:—Flight Lieutenants: A. C. Barnaby, H. Fawcett, R. P. Ross, F. W. Bowhill, A. B. Gaskell, and C. E. Maude have been promoted to the rank of Flight Commander, all with seniority September 26th

* * *

On September the 23rd a remarkably good piece of work was done by certain officers of the Royal Naval Air Service, detached for duty with the Allied Forces in Belgium. According to the official account, "British aeroplanes delivered an attack on the Zeppelin sheds at Dusseldorf. Conditions were rendered very difficult by the misty weather, but Flight-Lieutenant C. H. Collet dropped three bombs on the Zeppelin shed, approaching within 400 feet. The extent of the damage done is not known. Flight-Lieutenant Collet's machine was struck by one projectile, but all the machines returned safely to their point of departure."

Various newspaper reports state that the detachment of six

machines broke up into two divisions, half going to Cologne and the other half to Dusseldorf, and some papers say that owing to the fog at Cologne the aviators did not drop their bombs, as they could not locate the shed, and only knew that they were over the city. The "Handelsblad," of Antwerp, said, on the other hand, that they threw several bombs from a height of 1,500 feet, and before returning again perceived that their object had been achieved, and that the whole shed was in flames. On the other hand, reports from Basle in Switzerland state that no damage was done at Cologne, but that at Dusseldorf a Zeppelin in the shed was damaged, and a tool shop was burned.

One gathers from various reports that the enterprise was under the command of Major E. L. Gerrard, R.M.L.I., Squadron-Commander, R.N.A.S., and from various sources it seems that the other officers concerned besides Lieut. Collet, R.M.A., were Squadron-Commander Spenser Grey, and Flight-Lieuts. Lord Carbery, Marix, Fowler, and Rainey, or Newton-Claire, all R.N.A.S.

Apropos the raid on the Zeppelin sheds, the "Exchange" correspondent reported:—"The raid was accomplished under favourable conditions. A light mist at about 1,000 ft. was conducive to the aviators' flying without being perceived, but unfortunately made it impossible for them to fulfil their mission to Cologne. They had to return by Boussolle through a fog." It may interest the "Exchange" Company to know that "boussolle" is merely the French for a compass, and not a place on the map.

* * *

His Majesty's Airship, "Beta," of the Naval Airship Section, has recently made several trips over the City of London, on Tuesday, Wednesday, and Thursday of last week. One gathers that the "Eta" was to have been used for the purpose, but it was necessary to deflate her in the previous week when she was caught anchored out in the gales which then blew.

On Thursday, H.M.A. "Astra-Torres," otherwise Naval Airship No. 3, crossed over London, starting from her regular station at Kingsnorth on the Medway. On passing over the Vickers test ground at Joyce Green, two of the aviators there set off in pursuit of her, and circled round her several times over Woolwich. No. 3 continued her trip over London until a late hour at night.

* * *

The appointment to a temporary commission as Lieutenant, R.N.V.R., of Mr. Harold Perrin, Secretary of the Royal Aero Club, was announced by the Admiralty on September 22nd, too late for reference in the last issue of THE AEROPLANE. Mr. Perrin has already gone to the Continent, and one gathers indirectly that he will be concerned chiefly with the motor vehicles employed by the land-going contingent of the R.N.A.S. One hopes to see him return in due course, having distinguished himself on active service as much as he has done at home.

There is no person to whom aviation owes more than to Mr. Perrin. As Secretary of the Royal Aero Club, he has had many difficult tasks to perform which have required both a strong will and tact, and he has invariably carried them through in a manner which reflects the greatest credit on his ability. As an organiser, especially in connection with the important competitions flown under Royal Aero Club rules, he has shown himself to be in the first rank, and his organising ability should have great scope in his new vocation. In the nature of things the membership of the Royal Aero Club includes a number of young men of high spirit, and it speaks highly for Mr. Perrin's strength of character and personal ability that he has succeeded in winning their personal regard, while at the same time checking their exuberance. The best wishes of every member of the Club go with Mr. Perrin.

Lieut. C. G. W. Head, R.N., whose appointment for submarines is noted, will be remembered as a pupil at the Bristol School at Salisbury Plain in the early days. Though above the average size and weight he showed great ability as a pilot, flying remarkably well on the small and somewhat tender

35-h.p. monoplanes, then used by the firm for school work, and had he continued his career as an aviator, he would have undoubtedly acquired high rank by this time in the Naval Air Service. However, his ability as a submarine officer made it advisable to retain him in that service, and as such he will doubtless have opportunities for distinction.

* * *

Mr. Erskine Childers, the amateur yachtsman whose knowledge of the German coast is shown in that great novel, "The Riddle of the Sands," is now serving his country on the "Engadine," as Lieutenant, R.N.V.R. This cross-Channel boat is employed in looking after seaplanes. The original "Dulcibella" of the book is moored in the Hamble River, opposite Calshot, hence, no doubt, his connection with seaplanes.

* * *

Captain Barnby, R.M.L.I., Flight Commander R.N.A.S., has had rather a nasty smash on a land machine, losing several teeth and being otherwise largely but not seriously damaged. One wishes him an early recovery.

* * *

The "Evening News" reports on the strength of a Central News message that the petrol bomb which has been discharged from our aeroplanes in the field with such excellent results is the invention of Flight-Lieut. C. R. Finch-Noyes, of the Royal Naval Air Service. The military wing of the Royal Flying Corps has for some time been harrying the German lines, and using these bombs, which are reported to have done serious damage.

MILITARY.

The despatch from General Headquarters published on September 22nd, and dated September 18th, contains the following passages relating to aircraft:—

"An incident which occurred some little time ago during our retirement is also worthy of record. On August 28th, during the battle fought by the French along the Oise, between La Fere and Guise, one of the French Commanders desired to make an air reconnaissance. It was found, however, that no observers were available. Wishing to help our Allies as much as possible, the British officer attached to this particular French Army volunteered to go up with a pilot to observe. He had never been in an aeroplane, but he made the ascent and produced a valuable reconnaissance report. Incidentally, he had a duel in the air at an altitude of 6,000 feet with the observer of a German Taube monoplane which approached. He fired several shots and drove off the hostile aeroplane. His action was much appreciated by the French.

"In view of the many statements being made in the Press as to the use of 'Zeppelins' against us, it is interesting to note that the Royal Flying Corps, who have been out on reconnaissances on every day since their arrival in France, have never seen a 'Zeppelin,' though airships of a non-rigid type have been seen on two occasions. Near the Marne, late one evening, two such were observed over the German forces. Aeroplanes were despatched against them, but in the darkness our pilots were uncertain of the airships' nationality and did not attack. It was afterwards made clear that they could not have been French.

"A week later an officer reconnoitring to the flank saw an airship over the German forces and opposite the French. It had no distinguishing mark and was assumed to belong to the latter, though it is now known that it also must have been a German craft. The orders of the Royal Flying Corps are to attack 'Zeppelins' at once, and there is some disappointment at the absence of those targets."

[The reference to airships is particularly interesting. Apparently, to the average soldier, as well as to all "war correspondents," every German airship is a Zeppelin, just as every aeroplane, hostile or otherwise, is a "Taube." The certainty that the non-rigid airships could not have been French is probably accounted for by the non-existence of any French airships anywhere—for rumour coming from France has it that the two or three airships the French possessed at the outbreak of war were shot down by their own troops during the first week.—Ed.]

In the despatch published on September 24th, the following references to aircraft occur:—

"During the day's (September 18th) fighting an anti-air-

craft gun of the 3rd Army Corps succeeded in bringing down a German aeroplane."

Describing the fighting of September 19th, it is said:— "Another hostile aeroplane was brought down by us; and one of our aviators succeeded in dropping several bombs over the German lines, one incendiary bomb falling with considerable effect on a transport park near La Fere."

In the same despatch a letter found on a German officer of the VII Reserve Corps, dated Cerny, S. of Laon, 17.9.14, is given in full. It contains the following passage:—

"The French airmen perform wonderful feats. We cannot get rid of them. As soon as an airman has flown over us, ten minutes later we get their shrapnel fire in our position. We have little artillery in our corps: without it we cannot get forward."

[One is a trifle doubtful as to whether the German officer was able to distinguish between French and British aeroplanes, for it is scarcely likely that French aeroplanes would be operating with the British troops of whom he speaks as being opposed to his corps.—Ed.]

"Amongst items of news are the following. Recently a pilot and observer of the Royal Flying Corps were forced by a breakage in the aeroplane to descend in the enemy's lines. The pilot managed to 'pancake' his machine down to earth, and the two escaped into some thick undergrowth in a wood. The enemy came up and seized the smashed machine, but did not search for our men with much zeal. The latter lay hid till dark and then found their way to the Aisne, across which they swam, reaching camp in safety, but barefooted."

The following extract from the official despatch published on September 29th, deals with aviation:—

"Wednesday, the 23rd, was a perfect autumn day. The welcome absence of wind gave our airmen a chance of which they took full advantage, gathering much information.

"Unfortunately, one of our aviators, who has been particularly active in annoying the enemy by dropping bombs, was wounded in a duel in the air. Being alone on a single-seater monoplane, he was not able to use a rifle, and whilst circling above a German two-seater in an endeavour to get within pistol shot, was hit by the observer of the latter, who was armed with a rifle. He managed to fly back over our lines, and by great good luck descended close to a motor ambulance, which at once conveyed him to hospital.—[Probably, Mr. Mapplebeck.—Ed.]

"Against this may be set off the fact that another of our fliers exploded a bomb amongst some led artillery horses, killing several and stampeding others.

"On both Wednesday and Thursday the weather was so fine that many flights were made by the aviators of the French, the British, and the Germans, producing corresponding activity amongst the anti-aircraft guns.

"So still and clear was the atmosphere towards evening on Wednesday and during the whole of Thursday that to those not specially not on the look-out the presence of aeroplanes high up above them was first made known by the bursting of the projectiles aimed at them,

"The puffs of smoke from the detonating shell hung in the air for minutes on end like balls of fleecy cotton-wool before they slowly expanded and dissipated.

"From the places mentioned as being the chief targets for the enemy's heavy howitzers it will be seen that the Germans are now inclined to concentrate their fire systematically upon definite areas in which their aviators think they have located our guns, or upon villages where it is imagined our troops may be billeted. The result will be to give work to the local builders."

* * *

Lieut. Charles George Gordon Bayly, R.E., and Royal Flying Corps, whose death was announced last week, was born at Cape Town in 1891. His father, the late Mr. Brackenbury Bayly, was a nephew of General Gordon, who was killed at Khartoum, and his mother was a daughter of Mr. Jesse Coope, of Mayfield, in Sussex. Mr. Bayly was educated at St. Edmund's School, Hindhead, and at St. Paul's. He joined the "Shop" at Woolwich in February, 1910, and received his commission in the Sappers on July 21st, 1911. He was a notably good football player, and the taking of his aviator's certificate was delayed through an injury received while playing football.

He learnt to fly at the Caudron School at Hendon, and took his certificate in February, 1912. He joined the Central Flying School in May of this year, and was gazetted to the Royal Flying Corps on June 30th.

His father died just before the outbreak of war, and to his widowed mother and only sister all will offer their respectful sympathy.

* * *

BARRINGTON-KENNETT.—About September 22, in France, from wounds received at the Battle of the Aisne, Aubrey Hampden Barrington-Kennett, 2nd Lieut. Oxfordshire and Buckinghamshire Light Infantry, fourth and youngest son of Lt.-Col. B. H. Barrington-Kennett, his Majesty's Body Guard, aged twenty-four years.

Mr. Barrington-Kennett was the youngest brother of Captain B. H. Barrington-Kennett and Lieut. V. Barrington-Kennett, both of the Royal Flying Corps.

* * *

Colonel H. C. L. Holden, C.B., whose appointment to be Assistant Director at the War Office was gazetted on September 22nd, is the Vice-Chairman of the Royal Aero Club, and has presided at the majority of the Club's meetings since the lamented death of the late Chairman, Sir Charles Rose. Colonel Holden had a distinguished career in the Royal Engineers. He is also famous as the designer of the Brooklands track, which is the only properly designed motor racing track in the world. He is one of the oldest members of the Royal Aero Club, and has done an immense amount of highly valuable honorary work which has contributed to the progress of motoring and aviation.

Captains Massy, Hoare, and Newall, of the Indian Army, whose appointments as flight commanders are noted, passed through the Central Flying School last year, and have since been employed in establishing an Indian Central Flying School at Sitapur. From their appointment one assumes that it is the intention of the authorities to attach a squadron of aeroplanes to the British Indian Contingent which is now operating with the French Army, and distinct from that portion of the Royal Flying Corps operating with the French Headquarters and with the British Expeditionary Force.

Captain H. E. Walcot, whose appointment is noted, will be remembered as being at the Bristol School on Salisbury Plain, and later taking his certificate at Brooklands. He was afterwards appointed to the Aeronautical Inspection Department.

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The undermentioned non-commissioned officer in the Regular Army has been selected for promotion to combatant commission as second lieutenant under the Regulations issued with the Army Order of May 7th, 1914: Reilly, W. W. W., Sergeant, Royal Flying Corps (M.W.).

* * *

Some information about the Royal Flying Corps has been brought from France by Mr. A. J. A. Wallace Barr, who has just returned from Paris. While there, he went to St. Cyr and saw several British pilots, as well as French. The French seem astonished at the British aeroplanes as well as at the pilots, the habitual evolutions of Messrs. Wingfield Smith, Lawrence and others who have visited St. Cyr apparently impressing the French officer-aviators much as MM. Chevillard, Pegoud and Chanteloup impressed us. Their surprise seems to be due, not so much to the evolutions, for the French professional pilots can do as well, but to the fact that the pilot is an officer-aviator. Mr. Barr says that the Avro biplane has won a high reputation on service, as it stands up to hard work and exposure quite as well as any other machine and a great deal better than most.

Mr. Barr reports that the story of Mr. Spratt's frightening a German aviator into alighting and surrendering is quite true, though the yarn of his "pancaking" on top of the German machine to prevent it from escaping is untrue. The point of the real story is that Mr. Spratt had neither bombs nor a revolver in his possession at the time, and simply scared the German down by doing fearsome spirals over him and making signs to him to go down. A very good performance, and one of which South Africa may be proud.

On the subject of troops being unable to recognise machines Mr. Barr says that when fairly low down German machines



The late Lieut. C. G. G. Bayly, R.E., R.F.C.

can always be distinguished by a black cross (more or less of the Maltese type) on a gray ground below and above each wing and on the rudder. The French machines have a tricolor-disc under each wing, and the British ones a Union Jack in a shield shape.

As regards personal news of the R.F.C. there was not much available. Mr. Gilbert Mapplebeck had had a bad smash in landing and was rather severely injured, though not dangerously. His name appears as wounded in the Casualty List issued on September 29th. Incidentally he is given as of the King's Liverpool Regiment, from which he is seconded, and not as of the Royal Flying Corps.

Mr. Loftus Bryan had landed uninjured in a back garden, when flying a reserve machine back during the retreat from Mons. One of the air-mechanics—whose name was, unfortunately, not given—had been awarded the Cross of the Legion of Honour for distinguished bravery.

Mr. Barr had a variety of other information, which it would not be policy to publish, but one may perhaps mention that at one period of the operations the R.F.C. was very much puzzled by the constant presence of a Zeppelin, apparently at anchor, over a certain part of the German lines. It never moved for several days on end, and looked so much like a bait to lure them into the range of special guns that no one went near it, and all waited till it began a voyage. It never did so, and finally the whole field of battle shifted and so the mystery has never been solved.

Major Higgins, D.S.O., commanding No. 5 Squadron, R.F.C., at the front, writing to a friend at Farnham, states that the corps has been decorated by the French with the Legion of Honour.

* * *

The following letter, reproduced in the "Times," from an officer of the Royal Flying Corps, writing from fifteen miles

east of Paris on September 4th, gives the following description of what he has seen from the air:—"My last flight with — we were shelled and shot at about 100 times, but only 13 shots went through the planes, and fortunately neither of us was touched. Under fire it is loathly to go up as passenger. The corps has been very lucky, losing only one pilot (Waterfall) and his passenger up to date. We have been shot at and shelled by friend and enemy every time we have been up, and machines have scarcely ever come down without bullet holes all over the planes. To-day poor old Charlton and Wadham had a smash, but neither is killed, by a bit of luck. Yesterday I was up with — for an evening reconnaissance over this huge battle. Can you imagine such a sight? We flew at 5 p.m. over the line, and at that time the British Army guns (artillery, heavy and field) all opened fire together. We flew at 5,000 ft. and saw a sight which I hope it will never be my lot to see again. The woods and hills were literally cut to ribbons all along the south of Laon."

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The following extract from a letter from an officer of the R.F.C. is of interest:—"You have heard by now of the battle of Mons. I was over that. We were reconnoitring roads behind, and when we went out the guns were getting to work. I saw two German batteries with our shells bursting over them like little bits of cotton wool while our guns didn't seem to have been found. Later the German aeroplanes flew over and found them out. When we came back houses were burning at Jemappes and Mons, and stacks were burning all over the place from shell fire. I saw one of our trenches and a German attack coming off. They were coming up in a long, dense column, with the head all spread out in front like a large human tadpole.

"Just after this they got on to us with anti-aircraft guns and burst shells round us. We got off with nothing worse than a small splinter through the elevator. These guns are

rather terrifying, but do very little damage. Fellows have had shells burst all round them for quite a long time without being hurt at all. So far the machine I've been in has not been touched by bullets. We fly high now, 5,000 ft. or so, and are quite safe, but at first two or three machines came in pretty well riddled."

[It will be remembered that at the very beginning of the war THE AEROPLANE warned our pilots, on the strength of French experience, that nothing under 6,000 feet is safe.—Ed.]

* * *

The "Evening News" published last week the following letter from an officer of the R.F.C. :—

"We were up at Maubeuge at the beginning, fluttering about over the battle round Mons. One reconnaissance I made I went right up to and around Brussels. It's a wonderful thing to see a big battle from the air, especially the artillery part of it; one can easily see the flashes of the guns of both sides, extending miles right and left, and one can also see the shells explode, and estimate the accuracy of the shooting. From Maubeuge we retired, as you know, via St. Quentin, Noyon, Compiègne, etc., on to Paris, and there the German rush seemed to lose its strength and dash, and since then it has been our turn to advance.

"We got a great deal of flying, of course, and for the first three weeks we had splendid weather, and it was really most enjoyable. My new machine was a delight to me, and took me across the Channel in eighteen minutes! But, alas! I smashed her up about two weeks ago. I was on a long reconnaissance very late, and saw innumerable Germans, camps, and columns. I got delighted, and flew for about an hour in the dark until I was quite sure I was south of the German lines—I passed over eight large camps of these. Then, of course, I had to land and take a chance pretty well as to what I came down on. I struck a stubble field, which was lucky, but the crops, though cut, were still in cocks, which was unlucky, for I ran into them and broke the machine. However, I got a motor from a French camp near by, and got my information into headquarters that night.

"Then I went off to one of our bases by motor, passed through Paris, which was most interesting—it was just the day before the Government left—and at the base found another machine, which I flew back again to the front and rejoined my squadron. My machine has been struck by several bullets,



The N.C.O.s of a new squadron of the R.F.C. now being formed at Brooklands. Photograph by F. N. Birkett, Shepherd's Bush. With them is Mrs. Billing, of "Blue Bird" fame, now canteen manager to the Mess, and her small daughter appears in the front row.

but in no part that mattered—generally through the fabric only of the wings or fuselage. Some machines have been so badly hit and damaged that on getting down they have had to be destroyed.

"The Flying Corps has done extremely well. Sir John has more than once officially thanked us and complimented us, and the French Government have decorated a few of us. I am one of the chosen, and have been made a Chevalier de la Legion d'Honneur! What do you think of that?"

FRANCE.

The "Telegraph" reports that at 11.30 a.m. on Friday morning an aeroplane was seen over Calais. It threw on the town three bombs. The first fell in the Rue des Quatre-Coins, on the veranda of a doctor's house. It landed in a baby's mail-cart, and did not explode. The nurse, who was in the room near the veranda, heard the hissing made by the fuse, which, however, went out very shortly after touching the cart. The second bomb fell in the Fort Nieulay. Beyond making a hole in the paved ground no further damage was done. The last bomb fell at Fréthun, on the outskirts of the town. No serious damage was done. An officer of the French artillery went during the afternoon and took away the unexploded bomb. No loss of life or injury to anybody is reported.

It is stated that on September 25th a German aeroplane flew over Boulogne. The aviator threw a bomb, which fell into a shipbuilding yard. The damage done was very slight, being practically confined to the smashing of window-panes. Fortunately, nobody was injured.

This was probably the same machine which flew over Calais. It was reported later over Abbeville.

According to the "Express" correspondent at Boulogne a Taube aeroplane dropped bombs on the racecourse at Amiens on September 24th, believing it was an aviation camp.

The special correspondent of the "Times" in Paris reports on September 27th that, profiting by the fog, a Taube machine flew over Paris at a great height about noon that day. After circling round the Eiffel Tower the aviator dropped a bomb close to the house of the Prince of Monaco. An old man who was passing was killed on the spot, while his little granddaughter had one leg terribly injured.

After this the aeroplane dropped three more bombs, one in the Rue de la Pompe, another at Longchamp, where a cow was killed, and the last one in the Rue Vineuse. No serious damage was done by any of these. Another account states that a flag attached to a bag of ballast was dropped in the Rue Cevennes on the Magasins de la Ville de Paris. The flag bore the following legend:—"Parisians, attention! This is the greeting of a German aeroplane. (Signed) Von Decken." The aeroplane bore the number 174. The bomb, which exploded in the Place du Trocadero, was evidently intended for the Eiffel Tower.

This correspondent says it has been a curious fact throughout the recent times of stress that Parisians have exhibited no fear of bomb attacks and one has heard the remark, "Combien c'est dangereux de sortir sans parapluie." On the other hand, several people from Paris to whom the Editor of THE AEROPLANE has spoken say that the Parisians are thoroughly scared by bomb-dropping.

Mr. T. W. Massy, the correspondent of the "Telegraph," related on the 25th, how—"a German aeroplane flying over our lines was caught in a heavy fire, and a sudden rocking of the machine indicated that a bullet had been well placed. However, the aviator was able to turn to the north, and it looked as if he would land safely among his own people. The machine at first descended very gradually, but when it was within a few hundred feet above the ground it fell precipitately, and we had no doubt as to the result. Our opinion that the aeroplane was smashed was confirmed during the night, when a French officer of infantry and several men came into our lines and reported that they had been prisoners, but when the aeroplane fell close to them there was so much confusion among the enemy guarding them that they escaped."

"Another incident about which there was considerable pleasurable comment in our lines was the clever capture of German aeroplanes by a French cavalry patrol. Twenty cavalymen, penetrating some thickly wooded country, came upon a clearing in which there was a rich prize. Aviators and a number of

mechanics were engaged in overhauling five Taube aeroplanes, and the patrol made a dash to round up the lot. There was a fierce resistance, and twelve of the cavalymen were killed before the airmen were beaten. These aeroplanes will never fly again."

[This latter incident appears to be another version of the capture and destruction of some German aeroplanes in a barn, reported last week.—Ed.]

The "Telegraph" reports from Paris that, on September 23rd, at the Academy of Sciences, certain extremely important communications seem to have been made regarding a new projectile for use by aviators, as also concerning a new method of taking photographs from aeroplanes flying at great altitudes. Of course, no details are given in either case; these are State secrets. But we learn that great things are expected of the new bomb, or whatever it is, which has already, we are told, done marvellous work. In the same line of scientific investigation we learn that a student of physics, but eighteen years old, has perfected an apparatus by which one is enabled to see what is taking place on a battlefield a great distance away—how great is not mentioned. One of the members of the Academy has been appointed to examine and report upon the invention.

[Paris correspondents are very hard up for real news, hence their fondness for discovering abnormal explosives and optical inventions.—Ed.]

The following remarks published in "Le Matin" of September 18th, under the title of "Aviation after Six Weeks of War," are of interest:—

"For some time past, many soldiers returning from the front have complained, 'What are the French avions doing? We often see—far too often—the German aeroplanes manœuvring overhead. We seldom see the machines which carry beneath their wings the tricolor discs. What satisfaction should we not have to know that above us the French avions were protecting us against the Tauben and other "volatiles" from beyond the Rhine! Very often our positions are impregnable—a Taube appears at a low altitude; it turns, it banks, it comes and goes; at the moment of its departure a smoke bomb falls upon the earth as a signal from the aviator to the far-off watchers in the German lines, and we are forced to change our position. Cannot these aerial reconnaissances which leave us at the mercy of the enemy's marksmen be checked?' These remarks have been made to us by artillerymen, infantrymen, and cavalymen.

"Some of these observations may be true, but one must agree that aviation has rendered since the beginning of the war all the service which was expected of it from the point of view of general reconnaissance, for which it is principally suited. The purpose of these general reconnaissances escapes the comprehension of the soldier who sees the avions pass over him at more than 1,500 metres, and he does not always have an accurate idea of the value of the information which they carry towards an unknown point, but which may determine a movement to be executed by soldier, cavalryman, or gunner that will assist the common cause. Above the enormous front of the actual battle the avions cannot waste precious time in acting as aerial policemen and give chase to Tauben. The soldier also ignores the fact that the French aeroplanes, which are so few in number, also mark the positions of the enemy for the aiming of the 75 mm. shrapnel, which strikes terror into the enemy's ranks. Again, he forgets that on certain occasions the aeroplanes fulfil important missions in co-operation with cavalry. The Germans are less fortunate than we in general reconnaissance work, but apparently up to the present they have shown a burning zeal for minor reconnaissances. They come and go, manœuvre and return so often that the troopers cry, 'One sees only them,' and are persuaded that the French avions do not exist or cannot fly.

"It was sufficient for a single Taube to fly over Paris for half a dozen machines to drive back the savages who believe themselves privileged to bombard defenceless people in unfortified places, and thus the safety of the capital is attained. We can be assured that our aviators will likewise do good work above the field of battle."

A Special Correspondent of the "Journal," M. Edmond Claris, however, publishes an interview with an aviator who

has seen considerable war service. "The aeroplane," said M. Claris's informant, "is the king of modern battles. It is thanks to it that the French have gained all their victories, and through it we shall succeed in a few days' time in driving the Germans out of France. At the outset we were taken rather by surprise. Germany had silently organised her flying corps with wonderful effect. The aviators were more numerous than were supposed and had good machines. The French, however, used their admirable flying corps without delay, and it played a decisive part in the battle of the Marne.

"It can be stated definitely that the French aeroplanes have carried out successfully the task that the French people were confident that they would perform. As regards civilian aviators I cannot express any general opinion. All I know is that two of the most popular French flying men, Garros and Brindejone, have distinguished themselves notably by their bold flights, their daring, and their courage. They have both been admirable, and the military aviators have vied with them in their enthusiasm and their boldness.

[This does not quite tally with the estimate civilian aviators have formed of the French officer pilots.—Ed.]

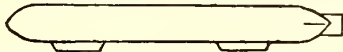
"It is untrue that the aviation park at Rheims has been destroyed. After the passage of the enemy there were machines still able to be of service. In their hurry the Germans forgot to burn them. There can be no doubt that the Taubes are taking no risks now that they know that every time they go out they will be attacked and brought down by our aviators. They have become more prudent, while we have been getting bolder. The present war has shown the difficulty of using airships, and they have played no part in it. They are at the mercy of a squadron of aeroplanes. I cannot believe that the military airship has any future."

GERMANY.

Zur Unterscheidung deutscher und feindlicher Luftfahrzeuge.

Um deutsche Luftfahrzeuge von feindlichen unterscheiden zu können wird folgendes bekanntgemacht:

1. **Zeppelinluftschiffe** sind zu erkennen an ihrer langgestreckten, röhrenförmigen Gestalt und den beiden dicht unter dem Schiffsrumpf hängenden Gondeln. Die Schiffe sind mit grauem Stoff bekleidet und tragen hinten umfangreiche Steuerflächen.



2. **Schütte-Lanz-Schiffe** haben schlanke fischförmige Gestalt; sie tragen hinten eine senkrechte und eine waagerechte Steuerfläche. Von den fünf Gondeln hängen zwei oder drei in der Mittellinie unter dem Rumpf, je eine weitere rechts und links etwas höher.



3. **Parsevalschiffe** haben Zigarrenform und sind bedeutend kürzer und gedrungenere als die zu 1 und 2 genannten Schiffe. Sie besitzen nur eine Gondel, zu der vom Schiffkörper aus ein dicker Schlauch herabführt. Die Steuerflächen sind quadratisch, die Farbe der Hülle ist gelb.

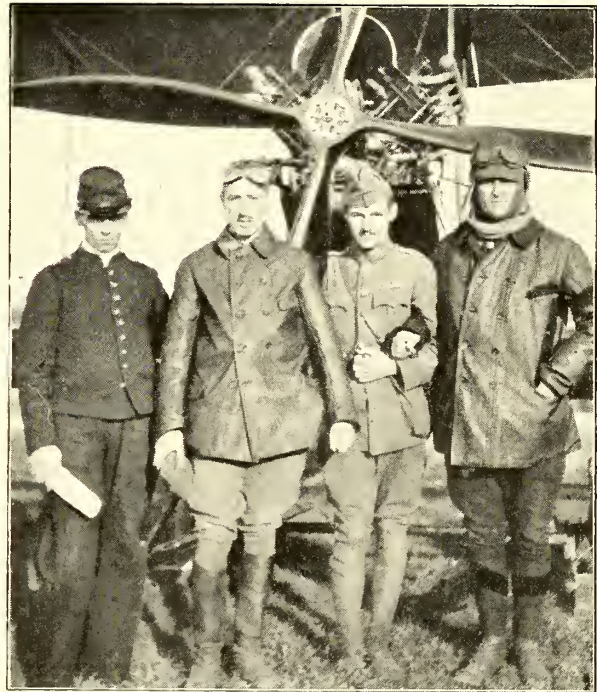


4. **Militärluftschiffe** sind daran erkennbar, daß sie unterhalb des torpedoförmigen, hinten spitz auslaufenden Körpers einen Kiel haben, in dem vorn der Führerstand, weiter hinten zwei Maschinenstände sichtbar sind. Der Kiel ist mit dem Gaskörper durch Stoffbahnen so verbunden, daß die beiden Teile völlig ineinander übergehen. Die Hülle ist gelb.



Die bisher in Frankreich und Rußland vorhandenen Luftschiffe sind zu weitgehenden Unternehmungen nicht befähigt; es ist daher kaum anzunehmen, daß sich feindliche Luftschiffe im Innern unferes Landes zeigen werden.

From a German Military Paper.



The Sapeur-Aviateur Louis Noel, Lieuts. J. Lawrence and Wingfield-Smith, R.F.C., and Capitaine-Aviateur Watt, photographed at St. Cyr.

The accompanying illustration is a reproduction of half a column of the "Parole (Feldnummer)," otherwise a field edition of the paper issued to the German troops. This particular copy was taken by a man of the Flying Corps from the body of a dead German. The following is a very free translation of the reading matter round the blocks:—

"FOR THE DISTINGUISHING OF GERMAN AND HOSTILE AIRSHIPS."

"In order to distinguish German airships from foreign ones, the following is made known:—(1) Zeppelin ships are to be recognised by their long stretched tubiform shape, and the two gondolas hanging under the keel of the airship. The airships are covered with gray stuff, and carry behind them a series of steering surfaces. (2) The Schutte-Lanz airships have smaller fish-form bodies. They carry behind horizontal and vertical steering surfaces. Of the five gondolas two or three hang in the middle under the keel, and others to the right and left somewhat higher. (3) The Parseval airships have a cigar-form body, and are more compact than airships No. 1 and 2 mentioned. They possess only one gondola from which a thick tube leads to the airship body. The steering planes are four-sided and the colour of the envelope is yellow. (4) The Military airships [i.e., those built by the Army to Major Gross' designs.—Ed.] may be recognised because they have a keel running along underneath the torpedo-form body, which has a pointed end. In the fore part of the keel is the conning tower, and the two engine cabins are further aft. The keel is so built into the gas envelope with strips of material that the two parts form one body. The hull is yellow.

"The airships formerly used in France and Russia are not suitable for long trips. It is, therefore, scarcely to be expected that foreign airships will show themselves in the interior of our country. (5) German aeroplanes may be recognised, because they have on top and underneath of each plane, as well as on both sides of the rudder, the full width of each surface, a black cross in the form of the Iron Cross."

The "Lokalanzeiger" of the 17th inst. announces that a rich inhabitant of a Berlin suburb has offered to distribute the sum of £15 among the non-commissioned officers and crew of the airship which drops the first bomb over London.

A young lady recently returned from Germany, reported in the "Telegraph," says:—"The Germans are certain they will win. They told me, a month ago, that in four days they

were going to finish with Paris. Then they would start with England, and she would sing very small. They say their Zeppelins are coming over here to attack London. A funny thing happened in Breslau when the war started. The planet Jupiter was very bright one evening, and some people, thinking it was the light of an airship, fired at it."

RUSSIA.

It is reported that a Zeppelin airship appeared over Warsaw at 5 a.m. on the 26th, and dropped two bombs near the station of the Kalicz railway. One of the bombs exploded and three soldiers were wounded. The Zeppelin was twice hit by gunfire and endeavoured to escape in the direction of the fortress of Novo Georgievsk, to the north of Warsaw. Here it was again hit and brought to the ground.

Mr. Norregaard, of the "Chronicle," reports that a wounded officer, describing the German methods of fighting in East Prussia, says they dislike cold steel but make good use of their artillery, aeroplanes, and armoured motor-cars. "Aeroplanes and dirigibles circle over our artillery, dropping paper to locate the positions. At night time the aeroplanes drop large Bengalese lights over the artillery and small bright lights over the infantry. At first the German armoured motor-cars with machine-guns wrought considerable damage among our troops, but we soon managed to counter-attack successfully with artillery."

A Russian officer, describing the operations of a German Zeppelin over a certain town, says:—"For three nights it came regularly. On the fourth night all lights in the town were put out. Taking up a point of observation outside the town, I awaited the approach of the Zeppelin. Presently I heard the noise of its propellers. Then, suddenly, a bright ray shot down, illuminating a neighbouring field, and finally settling over the town and throwing up the streets and buildings in strong relief. Then I heard shots—one, two, three—and the light from the Zeppelin vanished and the noise of the propellers faded.

"At dawn the Zeppelin returned, circling over the empty streets. For a moment it was stationary; then a crack and a flash, and the Zeppelin proceeded on the even tenor of its way. In the town stretcher bearers carried off those wounded by a bomb which fell close to the Red Cross Hospital, causing terrible havoc."

The "Telegraph" reports that a couple of railway trucks have brought to Petrograd the remains of a Zeppelin airship which was brought down from a great height by Russian artillery fire. The greater part of the envelope was destroyed by the explosion of gas which it contained, but the car, with its fittings and four propellers, are in a state of comparatively good repair. It is not clear whether this is one of the two Zeppelins the destruction of which on this front had already been reported, or whether it is an additional loss to the aerial fleet that, according to German views, was to play so important a part in the world war. If, however, as is stated, it was shot down in the dead of night, then it is apparently a third airship of this type that the Russians have bagged, as the two captures reported at the time of their occurrence had evidently taken place during the day.

[The reference to four propellers would point to the airship being a genuine Zeppelin, though as only a single car is mentioned doubt again arises.—Ed.]

BELGIUM.

The "Daily Chronicle's" Brussels correspondent reported on September 21st that a serious collision took place at a station close to Brussels between a train filled with wounded and another carrying material for a dirigible shed. This collision completely blocked the line for two days. In spite of this accident the Germans quickly succeeded in bringing up all the equipment and material necessary for the construction of an enormous aerodrome at Berchem St. Agathe.

[Presumably "aerodrome" in this case means a portable shed for airships. Should this be successfully erected we may yet hope to have our slumbers disturbed in London. However, the Naval Air Service may have something to say about its erection.—Ed.]

A Zeppelin airship was reported over the first line of defence

of Antwerp on September 22nd in the direction of Moll and Lierre. Detected by the glare of the searchlights from the forts the airship turned back.

On September 24th a Zeppelin airship was seen at Meersen in the south of the province of Limburg. It disappeared in a southerly direction.

On the evening of September 24th a German aeroplane was destroyed at Hal, near Brussels, by an Allied biplane. An "Exchange" telegram from Denderleeuw on September 25th states that the victor was a Belgian, while a cable from the same firm at Antwerp, dated September 26th, gives the honour to an Englishman. The two cables may possibly relate to different incidents.

The "Exchange" correspondent in Belgium reports:—"I was present at 5 a.m. yesterday (September 24th) at a duel over Brussels between Belgian biplane and a German Taube, which was in pursuit of the biplane. The two flew to a great altitude and fired several times at each other at short range. Suddenly the Taube turned turtle and fell, and the biplane returned towards Antwerp."

It was reported from Ostend on September 24th that a Zeppelin, coming from the direction of Thielt and Thourout, flew over Ostend at eleven o'clock this evening and dropped three bombs. It afterwards returned to Thielt. The first bomb fell on the De Smet de Nayer Bridge, which lies on the outskirts of the town, on the road to Blankenburghe, at the entrance to the Bois de Boulogne. The second fell in the harbour, and the third on the office of Camille Willems, wholesale fish merchant, in the fish market. The latter's office was demolished, and a watchdog in the office was killed. The windows in all the houses facing the market were smashed, and the electric tram wires were broken. No one was killed or injured. As soon as the explosions were heard all the lights in the town were promptly extinguished, and the inhabitants collected in the darkness in the streets to discuss the affair.

Mr. Percy Phillips, the enterprising "Express" correspondent at Ostend, makes the somewhat astonishing statement that the raid was made by a Zeppelin which is believed to be one of the new aerial fleet now being built in Brussels for the invasion of England. This statement need not be taken too seriously, because, as has already been pointed out, Zeppelins cannot be built in a few months. The airship has to be built to a framework just as a ship for the sea has to be. Therefore, it cannot very well be built in parts and assembled in a hurry. It is, however, quite possible that the recent rumours of the parts of a large shed being brought to Brussels portends the assembling there of ships of the Parseval type, the cars and envelopes of which can be transported by road, and the ship inflated there afterwards. It seems probable, however, that bomb-dropping aeroplanes from Belgian ports would make it difficult to carry out such work.

According to Mr. Phillips' report the bombs used by the Zeppelins are of formidable size, as one fragment which he examined was more than two inches thick. This, however, may have been a piece of the bomb casting thickened to hold some screw-cap or other attachment. It is reported that the Folkestone-Ostend boat, "Leopold II.," had a narrow escape from damage by one of these bombs, pieces of which were found on board.

Unexploded projectiles dropped from this Zeppelin have been found in a field at Waereghem. They measure 21 centimetres (about 8½ inches) in breadth, and 1-1.5 metres (about 4 feet) in length, and are charged with picric acid.

[Presumably we shall have waits from the daily papers about the barbarism of bombing an undefended seaside town. It is, therefore, well to remember the pictures of our Marines and of alleged Belgian troops landing at Ostend.—Ed.]

A message from Ostend, dated September 27th, published in the "Morning Post" on September 28th, reports that there was a fresh Zeppelin raid the previous night, but this time it did not come to Ostend, but flew over Alost, Ghent, and Deynze, where it dropped five bombs at 1.30 in the morning. It then flew towards Turnhout in the direction of Courtrai and Tournai, but suddenly branched off towards the east. From later information it appears that the Zeppelin also dropped two bombs on Thielt, one on a gas works, demolishing its stable. Two bombs fell near Rollegem but did little damage.

On Friday afternoon last, the 25th, Flight-Lieutenant Lord Carbery, carrying Prince Henri de Ligne as passenger, met with a slight mishap at a place unknown. The "Daily Chronicle" reports that the motor started missing badly before they had got well up, and that the machine struck a tree in a hurried attempt to land. The reports are conflicting as to the injuries received by the crew, but they are apparently of a minor nature.

HOLLAND.

Mr. A Jansen, the "Express" correspondent in Holland, states that an aeroplane on September 22nd dropped a bomb in one of the principal streets in Maastricht. Several windows were broken and a couple of houses damaged, but no one was injured. The nationality of the machine is not known, but the Dutch authorities have secured some fragments of the bomb, from which they hope to learn its place of origin. [Naturally the machine would be a German, so how about Dutch neutrality now? Or—horrid thought—could it have been one of our Naval aviators who mistook Maastricht for Düsseldorf?—Ed.]

DENMARK.

Mr. Warla Thorup, the "Express" correspondent at Copenhagen, reported on September 24th, that a message from Lemvig, in the west of Jutland (Northern Denmark) states that a Zeppelin airship passed in a southerly direction over Thyholm on the previous day, and travelled about sixteen miles outside the western coast. Three hours earlier the same airship had been seen passing north over Ringkjöbing. The "Politiken" assumes that the Zeppelin was engaged in reconnaissance work over the North Sea.

[Of course, it may only have been going North for the commander's health, but it seems unlikely.—Ed.]

The "Evening news" of September 26th prints the following telegram sent from Copenhagen on Friday, 25th:—A biplane with red flags flew south along the coast of Zealand to-day. A Zeppelin was also sighted in the Cattgat flying south.

[Zealand is the Danish island in the Baltic next to Sweden, and these operations would appear to indicate either a fear of British ships raiding the Baltic or of Russians going out, or possibly they may be watching the movements of the Danish warships.—Ed.]

ITALY.

It was reported from Rome on Friday, September 25th, that a decree had been issued prohibiting all aerial navigation in Italian territory.

FROM HOLLAND.

A Dutch reader sends the following notes taken from Dutch and German sources:—

On September 22nd two bombs were dropped from an aeroplane on the Dutch town of Maastricht. One of the bombs did considerable damage to a house in Brussels Street, while the other falling close to the hospital of the Red Cross, "Calvarienberg," did not explode.

As the aeroplane was flying very high, it was extremely difficult to indicate the nationality of the machine. As the aeroplane was flying in the direction towards Germany it seems quite possible that the bombs were dropped by an English airman practising for the raid on the Zeppelin sheds at Düsseldorf and Köln, and mistaking Maastricht for a German town. The Dutch Government is now making serious inquiries, and it is hoped that the incident may be cleared up. The bomb, which did not explode, certainly will give valuable information.

From Austria it is reported that Lieut. Flassig (writer of the book, "Fliegerhurs"), and Wolf have been killed, while flying over the Russian frontier.

Korschel has been very seriously wounded in an accident with a new type of aeroplane at the aerodrome at Asperen.

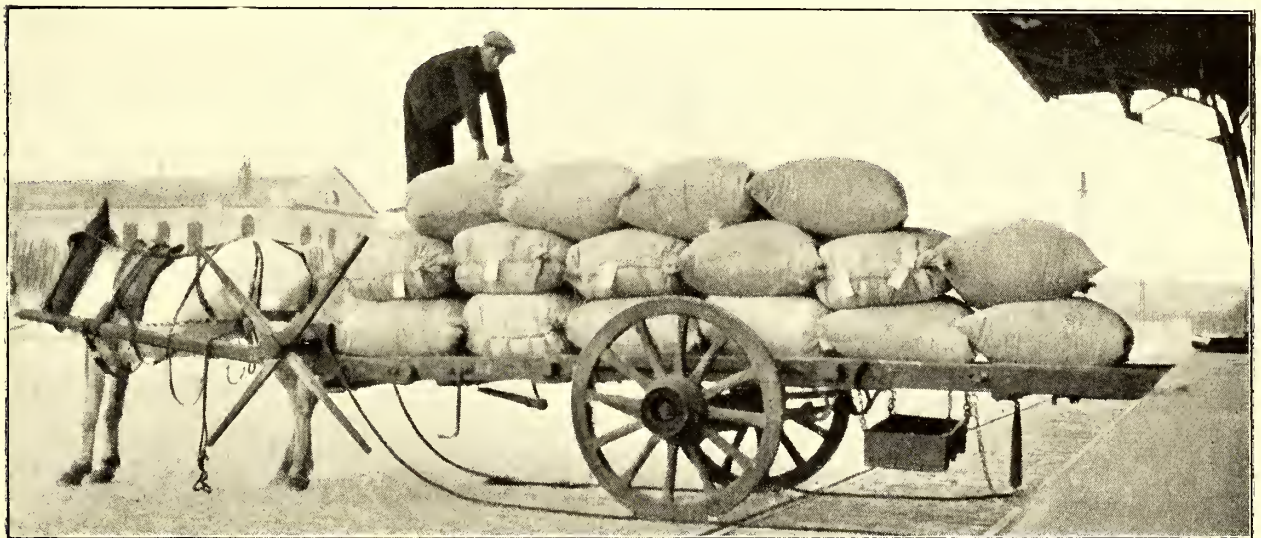
A newspaper in Tyrol tells that the Germans now have special type pigeons (Kriegstauben), which have the task of destroying aeroplanes of the enemy. It is stated that they carry small bombs which explode as soon as they settle down on the wings of an aeroplane, what is their principal task! Evidently Austrian pigeons are extremely intelligent.

From Germany it is said that Karl Ingold has been awarded the Iron Cross for distinguished achievements. Helmuth Hirth has now been promoted Lieutenant.

According to a Bavarian newspaper, the Germans have shot down at Nancy a French aeroplane, containing a message from Poincaré to the Tsar, stating that the French troops want at least one week rest, and asking the Tsar to attack with all his forces, as French and British are utterly exhausted. Probably this is the case with their own forces.—J. S.

"Business as Usual."

M. Emil Smeets, the proprietor of the Hotel Avenida, Rue du Colisée, Avenue des Champs Elysée, Paris, writes to say that the hotel is remaining open during the war. Many officers of the Services and members of the aeroplane trade made the acquaintance of this hotel for the first time during the Paris Aero Show last year, and all were very well satisfied with the accommodation and attention they received there. No doubt before long many people connected with aviation will be visiting Paris and may be glad to know the Avenida is open.



MUNITIONS OF WAR.—Part of a big consignment of acetyl-cellulose for the manufacture of "dope," brought from France last week by Mr. A. J. A. Wallace Barr, of Cellon, Ltd., with the assistance of the French and British Military Authorities. The longitudinal moment of inertia of the Army Service Corps' cart seems abnormal. The curious capstan is used to tighten the ropes holding the load onto the cart. The photograph was taken at a French port.

FROM DENMARK.

The last German aero papers tell the following news:—"To prove the untruth of the rumours that he should have been shot because serving for a hostile land, and to honour his bravery, the best of German aviators, Hellmuth Hirth, has been decorated with the Iron Cross of first class. The Iron Cross is, as will be remembered, a token of honour, especially favoured by the Emperor. It was founded on the 10th day of March, 1913, on Queen Louise of Prussia's birthday, and on the 5th August this year its institution was solemnly renewed by an Imperial edict."

The big Danish enterprise firm Monberg is building the new harbour for the hydro-aeroplane station at Warnemünde. When the war began the leading engineer was arrested and the work stopped, but he was of course set loose again at once, and the work on the flying-boat harbour has been taken up again to a great extent. [How does a firm of a neutral State stand if engaged in building military or naval work for a belligerent nation?—Ed.]

The Italian journalist Luigi Barzini writes the following word-painting:—"From Valenciennes we saw a German aeroplane return from a reconnoitring flight. However, it was not the only aircraft in the sky; suddenly we saw another aeroplane, tiny and swifter, a French one. It came from Tournay, and at once steered on the German aviator, who kept sticking to his route, but rose as quick as possible. An exciting chase began, and the little quick French aeroplane gained on its slower enemy so that we expected a formidable battle. The German aeroplane always rose, but flew on very steadily, as if it carried important news, on which the victory of its army depended. But suddenly we understood the German aviator's intention, as he steered straight into the clouds; to hide himself. Some minutes later we saw the German aeroplane between two clouds, when it had altered its direction; and half an hour later the French aeroplane returned without results."

The half-official newspaper, "Lokalanzeiger," announces that no German airships of any system have been destroyed. All the airships, which have hitherto been employed by the Army have fully done the services expected of them. And the unavoidable damage, which a few of them have sustained on their long perilous flights, has in no cases cost the loss of the ship. No German airship has been conquered by the enemy.

As a note in my last letter told, the two Danish aviators, Seth Jensen and Krause Jensen, have been accepted as voluntary aviators in France. Seth Jensen is rather well known as chief pilot of the Morane school at Villacoublay, and last year only two months after taking his brevet he made a 300 km. non-stop flight for the Coupe Pommery from Villacoublay to Peterswald in Bohemia on a Clement Bayard monoplane, and Krause Jensen is a pupil of his. And so the two following letters, which we have had from them, may be of interest:—

The first is from Krause Jensen at Villacoublay, August 12th.

Times have altered, since you heard from me last, for my part with the result that I have been enrolled in the French Army, where I am engaged as an aviator with the artillery. I am in the same escadrille as Brindejone des Moulinais, who is just as cheerful as when he visited Copenhagen on his big "vol des capitals" last year.

The first aeroplane available for me was an ugly monster of a "Nieuport destroyer," an ironclad monoplane with a machine gun. With her 200 h.p. engine (18 cylinders) she flies at a speed of 160 km. in the hour, that is to say, she should do so, but the beast was not yet "au point," as the French say. And I should scarcely think her to get fit for use in this war, as she is too much "en casse gueule," as my sapeur says in his jargon [i.e., "face breaker," otherwise nose heavy.—Ed.]

Now I fly with an armoured Dorand biplane, 125 h.p. 16-cylinder Anzani engine, double magneto Bosch, and two plugs for every cylinder, so that I know nothing of engine troubles. Everyday we are practising bomb-dropping, shooting with machine gun, etc., and are only too anxious for getting the order for leaving for the front.

Seth Jensen is only waiting for being allowed to join the Army, but that is not as easy as might be imagined. I was at thirteen different bureaux (offices)—at several of them both

twice and three times—and had at last to make my way to the Ministry of War, which resulted fortunately in my present activity as a French Army pilot. But then I have also the impression that the struggle for a foreigner to be allowed to take part in the war is almost worse than the war itself! For the rest the enthusiasm for the war is enormous here overall, and all what I have seen gives me the impression that there is no lack so far concerns the Army. Everything is in an exemplary order, and all uniforms, weapons, horse-collars and the rest of the material are new ones.

Seth Jensen writes from Dijon, August 24th:—

I have just arrived at this place with a Morane monoplane to be delivered, and I shall return to Paris to take over another one. From the beginning of the war, I have taken part in it as an Army aviator, and I should think that our next trip will be for Antwerpen, where we have five monoplanes to be delivered, and where we are likely to be stationed. Here is rather quiet, of course, except for the imprecations which pour down upon the Germans on account of their warfare. All rise against them. We are here three English, two Swiss, one Peruvian and two Danish aviators. Krause Jensen is exercising with a Henry Farman biplane and parts very likely for the front one of the first coming days. What concerns myself, my time is very scarce. I must return with the railway train—the last to run to-day—and it takes 12 hours for the distance of 180 miles to Paris. Well, then I came down here pretty faster. I flew the distance in 3 hours.

A Berlin correspondent wires on Saturday evening, the 19th:—On a patrol flight Chevillard was shot down by Germans; he escaped rather unhurt from the fall and is now staying with the other war-prisoners. A later wire adds: Chevillard told that he flew so low, because he took the German troops for the English Allies.

Danish motorists returning from Germany, and the German newspapers, state that the land is very scarce of petrol, which is only used for the airships and the aeroplanes, while the auto-cars drive on spirit (i.e., alcohol).

In the last issue of "Münchener Medizinische Wochenschrift" (Munich Medical Weekly paper) is published that arrows now have been used as hand-artillery from the aeroplanes in the war. In a meeting at the beginning of this month at the Physicians' Society at Stuttgart, Dr. Johannes Volkmann read a paper on "War-surgical experiments of arrows as hand-artillery from aeroplanes," stating a series of cases. On the first of September, when a regiment camped at X—, two aviators flew over the country at a height of above 4,000 feet. Suddenly one of the soldiers felt a pain in his right foot, close to the heel. First he thought that his neighbour had happened to prick him, but at the same moment he heard loud cries from several of his fellows. When he examined his feet he found an arrow which had bored itself one centimetre and a half in his leg; the wounded pulled the arrow out at once.

As already told, several of his fellows had been wounded by arrows too, and they could only have been shot down from the aeroplanes. One man had been hit in his left leg, another had an arrow in his neck, a third had been hit in both his legs, a fourth had had his cheek penetrated (perforated), some soldiers had been hit on their hands, etc.—and all in all 13 cases are told. One of the soldiers was killed by an arrow, which penetrated his left temple, and the soldier was dead at once. Some fifty arrows are likely to have been dropped down so that the accuracy of shooting must be reckoned high. The arrows consist of a 10-centimetre long pin of steel, 8 millimetres thick. Its lower third part is solid, running into a sharp tip. The two remaining third parts of the arrow consist of four thin strips, so that a transverse section forms a cross. Only little quantities of metal being in the two third parts of the arrow it falls down through the air with the tip in front and thus is able to render its effect. The lecturer remarked that two horses had been killed too by the shower of arrows. The wounds, caused by these arrows, do not generally be very dangerous, if they only do not hit the important life organs. It seems as if especially the moral effect of the weapon has been looked for.—Hr.

The "Times" Newspaper, the R.A.F., and British Industry.

On a previous occasion it has been pointed out that there apparently exists some subtle sympathy between the regular aeronautical correspondents of the "Times" newspaper, and the staff of the Royal Aircraft Factory, and between both and Colonel Seely. In the "Times Engineering Supplement" of September 25th, there appears an article by one signing himself "Ornis," which adds to this impression.

Writing of British aeroplanes in the war this writer says: "It is also satisfactory to find that, though too small, the number did not fall short of Colonel Seely's statement, but on the contrary exceeded it." Why drag in Colonel Seely? His untrue statement was made in March, 1913. It was proved untrue by Mr. Joynson Hicks in July, 1913. And here we have "Ornis" congratulating him and the British nation that the figures were exceeded—very slightly be it said—in August, 1914. Most of them were built this year.

In the whole of this article the only aeroplane mentioned is the B.E. No mention is made of the Avro, Blériot, and Farman which have also displayed various qualities of excellence.

There is a jeer at the dual control fitted to many German machines, on the score of weight. Lightness is, of course, accountable for most of the success of the R.A.F. machines. "Ornis" omits to point out that properly arranged dual control may enable an observer to save his own life and that of a slightly wounded pilot, temporarily "knocked out."

There is also a jeer at "aeroplanes of much vaunted performance" as regards speed variation—the R.A.F. has been badly beaten in this respect—and it is stated that such aeroplanes have been discarded because of their lack of strength, one make because of weak landing gear. The reply to this is the very simple one that the Army does not care about very fast single-seaters, there appears to be some difficulty in finding pilots for them. But, curiously enough, many of the Naval pilots are very fond of them, and several of these "discarded" machines have been snapped up by the Navy. Incidentally, the Avro, which has shown the biggest speed variation of all two-seaters, has not been discarded, but has won high appreciation.

"Ornis" refers to the danger of such machines collapsing in the air in a vertical dive, or in flattening out after such a dive. Considering B.E.s are the only tractor biplanes of British make which have ever collapsed in this way, and that the modern B.E.'s have been altered to prevent this very thing, it was rather a daring point to mention, especially as the other machines to which he refers by innuendo have been looping the loop and performing the most extravagant feats in the air without collapsing.

The Double-edged Argument.

There follows a direct reference to this paper in the words "The preposterous statement that the enemy possessed 1,500 aeroplanes at the beginning of the war is calculated to do a great deal of harm." This paper alone, at the outbreak of war, stated that Germany possessed probably between 1,000 and 1,500 modern aeroplanes. There seems no particular reason to doubt the estimate.

Anyone in the motor trade who has been in close touch with the Mercédès or Benz firms has a fair idea of what their output of aero-engines has been for the last twelve months. British and French aviators and people connected with aviation have been to Germany, and German aviators and makers have been in this country during this year, and one learns much from them. The number of big flights in the big German competitions, reckoning them in proportion to those done in this country, give one a basis for computation, as do the number of fatal accidents reported in Germany. If one adds a percentage on account of the fact that the German aeroplane industry was actively preparing stocks of war material while we were endeavouring to repair the damage done to our industry by Colonel Seely and his friends, one sees that the figure is not far out.

The harm of over-estimation is said to be "much the same as would be done by giving currency to a statement which ostensibly tripled or doubled his (the enemy's) fleet." Yet "Ornis" next objects to under-estimation, for he says: "It has also been said that a Zeppelin cannot rise higher than

6,000 feet. Were this believed the steps taken to guard against such craft would be totally inadequate. The dissemination of such a notion is playing into the hands of the enemy."

Really, "Ornis" cannot have it both ways. According to him over-estimation of the enemy's air fleet may frighten us, under-estimation of his powers may make us careless. Personally I should have supposed that over-estimation of numbers would have stirred us to more strenuous action, and under-estimation of power would have given our defenders confidence and have prevented popular panic; but perhaps I am looking at the matter too much as an Englishman would do.

I have yet to hear of a fully loaded Zeppelin, with fuel for a long voyage, rising above 6,000 feet, but suppose I put the German aeroplane fleet at 500 effective machines, and the Zeppelin height record at 12,000 feet, both absurd figures, how does that affect "Ornis'" argument? The first is still above our own figure at the outbreak of war, and the second is still within reach of any decent aeroplane, or high-angle gun. I should have expected "Ornis" to have shown more skill in argument.

Patriotic Trading.

In the same column there appears an extraordinary recommendation to "all making aircraft and aircraft engines." As regards machinery "which emanated from Germany originally, no better use could be made of such German material than to divert it to the destruction of Germans. If a German lathe of good quality is available ready made in England and can be more quickly got than the British reproduction, . . . that tool should be purchased and used." (Note the use of the word "reproduction." It implies the necessity of waiting while an exact copy of the German tool is made, and bars the use of a British tool of similar capacity.)

With this one quite agrees—always provided that a similar lathe of purely British origin cannot be got as quickly. But if one can be got to do the work equally well, though not a "reproduction," the British product should be bought, for the very important reason that machinery is bought by dealers on credit, and by buying the German lathe for cash one is paying money to a mere dealer for a thing he has not paid for and will not have to pay for till the war is over, whereas by buying the British article one is paying money which goes almost immediately into the pockets of British workmen. To advise the purchase of German tools which do not represent even British capital, let alone British labour, so long as anything British can be got to do the work, is a scandalous act, and one is surprised that the editor of the "Times" Supplement did not fill in some such proviso as I have suggested.

This paragraph, which appears to be part of "Ornis'" article, came to me absolutely as a shock, for a week or two ago I was told categorically that the Royal Aircraft Factory had bought a quantity of German machinery, my informant adding that British-made machinery could be bought from stock to do the same work. I purposely refrained from mentioning the subject, for this is no time for stirring up internal strife, but the paragraph referred to is so exactly an excuse for unpatriotic behaviour of this sort that one would very much like to know the facts of the case. *Qui s'excuse s'accuse* is still generally true.

I had sincerely hoped that the staff of the R.A.F. and their friends would at this critical time have done their best to help and encourage others who are doing their utmost to provide war material and to give employment to British workmen. Only last week I suggested a way in which they could do so, by accelerating the production of aeroplanes to the same aerodynamic designs as the B.E. Yet here we have a renewal of the innuendoes against British constructors and excuses for taking work from British workmen. I had hoped to be able to avoid any criticism of the R.A.F., and only to be able to offer constructive advice, but it appears that such a course is not permitted. One would therefore be glad to know whether it is true that orders have been given for the Renault-type engine of the R.A.F.'s design, and for copies of the French Renault engine, or for parts of those engines, to firms who have never produced a satisfactory aero-engine of their own, and if so, how these orders affect firms whose engines did well in the Naval and Military Aero-engine Competition.—C. G. G.

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Flying in Southampton District.

A correspondent writes:—

Flying has been very active all the week, a lot of hard work being done every day. The Wight seaplane, which was built by Whites two years ago and exhibited at Olympia, was tested after the show, and after various alterations was the progenitor of the bigger Wights. It has again been brought out by Mr. Gordon England and has done a lot of flying. It is surprising how long some machines will last, and it speaks well of the construction. On Sunday it put up a particularly good performance over Southampton Water, its flying being watched with much interest by many people.

A machine which has been very much flown is a large Sopwith tractor with which experiments have been made every day. The Sopwith bat-boat (90 Austro-Daimler) has of course been very busy every day; in fact if this little machine did not appear out we should feel as though we had missed something. This machine is just another example of the high quality of British aircraft construction.

The Avro tractor was out continuously on Monday and has been flown on several occasions since. A Sopwith tractor was out twice from Woolston on Tuesday with Mr. Pixton as pilot. The machine bears the number 170, so it would seem that it is an early machine reconstructed after having already seen hard service. The second time the machine was out for a great while and came back low over the houses and alighted on the Itchen late in the afternoon.

The Henri Farman seaplanes have been busy during the week and one was used extensively on Sunday, putting up very fine performances. The same day a twin-float Sopwith tractor was flying well.

The people of Southampton were very pleased to hear of the splendid work done by Flight-Lieut. Collet during the week, as he is a Southampton man, and the local papers have been full of admiration.

The Aeronautical Society.

ASSOCIATE FELLOWSHIP ELECTION.—As a result of the recent election the following have been elected Associate Fellows of the Society:—

Major B. F. S. Baéen-Powell, Leonard Bairstow, Harold Bolas, F. E. Cowlin, A. Fage, C. R. Fairey, Lieut. J. N. Fletcher, R.F.C., Major H. Musgrave, R.F.C., J. L. Nayler, S. J. Norton, M. A. S. Riach, G. T. Richards, J. Schiere, F. J. Selby, N. A. V. Tonnstein.—BERTRAM G. COOPER (Sec.).

The Imperial Air Fleet.

Mr. C. J. Fairfax Scott, of the Imperial Air Fleet Committee, states that the aeroplane to be presented to the Australian Government for the British Army will be named the Liverpool. Towards its cost and equipment Mr. William Cain, of Liverpool, has been a munificent contributor.

It is hoped that similar machines will be presented to Canada, South Africa, and other parts of the Empire. The cost of each machine with gun equipment is about £1,500.

The Blériot which was presented by the committee is now in New Zealand. It was in this machine that the late Mr. Hamel flew from Dover to Cologne about 17 months ago. It is intended that these gifts to the various dominions shall form the nucleus of an Imperial Air Fleet for the whole of the British Empire.

A British Firm.

The following letter has been received from Messrs. Geo. W. Goodchild and Macnab, the well-known machine-tool firm:

Dear Sir,—Some people seem to think that because we are

the successors of Ludw. Loewe and Co., Ltd., we must be a German concern. We wish to state most categorically:—

"(1) That both our partners are born British subjects.

"(2) That not one farthing of the money invested in our business belongs to or has ever been controlled by Germans.

"(3) That whilst we have imported a considerable amount of material from Germany, yet a vast proportion of our turnover consists of English- and American-made goods, besides smaller amounts coming from France and other countries.

"(4) That after the unfortunate experience we had early this year with some German clerks, who exerted their capabilities in the same unscrupulous way as the diplomatic and military leaders of their country are exploiting theirs in France and Belgium, we have not a single German in our employment.

"(5) That we have stopped from the day of the declaration of war buying German goods either directly or indirectly.—(Signed) GEO. W. GOODCHILD."

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Fair	Fair	Foggy	Fog Wind	Fog	Good	Good
South Coast ...	Fine	Dull	Fine	Fine	Fine	Fine	Fine
East Coast ...	Fine	Fine	Fine	Fine	Fine	Fine	Fine

Hendon.—AT GRAHAME-WHITE SCHOOL.—Instrs.: Messrs. Manton, Russell, Winter and Shepherd. Pupils, with Instrs.: Flight-Sub-Lts. Giles, England, Ffield, Haines, Hart, Perry, Riggall, and Messrs. Carabajal, Polehampton, Stalker, Greenwood and Easter. Strts. alone: Flight-Sub-Lieuts. Allen, Rosher, Strong, Haines, Perry, Rosher, and Riggall, Messrs. Morgan, Polehampton, Stalker and Carabajal. 8's or circs alone: Flight-Sub-Lieuts. Rosher, Strong, Messrs. Wiles, Mumby, Strickland. (Mr. Wiles first part of brevet.) Certificates: Mr. Claude Strickland, Indian C.S. Machines: Grahame-White School biplanes.

AT HALL FLYING SCHOOL.—Instrs.: Messrs. A. Cini and F. L. Hall. Strts. alone: Mr. E. Brynildsen (26 rolls 5 strts.); Mr. J. Rose (10 strts.) Machines: 1 Hall tractor, 1 Dep.

AT BEATTY SCHOOL.—Instr.: Mr. G. W. Beatty. Pupils: Messrs. Virgilio, Hornby, Gardner, Parker, Whitehead, Leeston-Smith, Beynon, MacLachlan, Smith, Moore, Newberry, Bond, Monfea and Lieut. Rimington. Mr. Lord took his certificate on Sunday evening. Machines: Dual-control Beatty biplanes.

AT BRITISH CAUDRON SCHOOL.—Instrs.: Messrs. R. Desoutter and R. M. Murray. Strts alone: Messrs. Christie, Moon, Legh, Ivernce, Barfield, Henderson, Stevens, Burke, Gunner and Abbott. Machines: Two Caudron biplanes, 35-h.p. Passenger flights to pupils on 60-h.p. two-seater Caudron biplane, piloted by Rr. Desoutter.

AT LONDON AND PROVINCIAL AVIATION CO. SCHOOL.—Instrs.: Messrs T. Warren and T. Smiles. Strts alone: Messrs. W. White, C. Davidson, J. Moore, E. C. England Derwin, half an hour each day. Machines: One 35-h.p. L. and P. biplane. Mr. T. Warren, test flight Tuesday, September 22nd, reaching just over 1,000 ft. in four mins.

Shoreham.—AT PASHLEY SCHOOL.—Instrs.: Messrs. C. Pashley and Hale. Pupils with instr: Messrs. Selby and Cole. 8's and circs: Mrs. Joseph, Mrs. Vincent, Messrs. Winchester and Cole.

Eastbourne.—AT E. A. C. SCHOOL.—Pupils with Instr: Prob. Flight Sub-Lieuts. Huskisson (132 mins), Nicholls (175), Petre (190), R. Iron (141), Wright (164), Dawson (146). Left-hand turns alone: Flt. Sub-Lts. Huskisson, Petre and Iron. Right-hand turns and 8's alone: Flt. Sub-Lts. Nicholl, Wright and Dawson. Machines: E. A. C. biplanes.

MISCELLANEOUS ADVERTISEMENTS

All Advertisements for this column should arrive at this office by 6 p.m. **MONDAY** to ensure insertion. For the convenience of Advertisers, replies can be received at the office of **THE AEROPLANE**, 166, Piccadilly, W. **Special PREPAID Rate—18 words 1/6; Situations Wanted ONLY—18 words 1/-.** 1d. per word after.

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THE AEROPLANE



Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O. AS A NEWSPAPER.]

WEDNESDAY, OCTOBER 7, 1914.

No. 15

THE ENTENTE.



Above, officers of the Royal Flying Corps and a French flying officer at St. Cyr.—The method of transport to the local café is noteworthy. Below, Captain Oswald Watt, the Australian pilot, and the pilots and mechanics of Blériot Escadrille No. 30. The group includes Sapeur-Aviateur Bathiat, formerly of the Humber Company, of Coventry, and the Sapeur-Aviateur Louis Noel.

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"All the Comforts of a Home."

It is now a couple of weeks since the writer of those priceless dispatches from Headquarters reminded us that there is a distinct touch of autumn in the air, especially in the early mornings, and the time is rapidly approaching when the Continental winter will be on our troops in the field, with all its rigours. We who stay at home in ease and grouse at a temperature a little above freezing-point have little conception of what a really hard winter means, especially to those who have to sleep out in it. The Southern Englishman blows on his fingers and makes rude remarks about it being "cold enough to freeze the tail off a brass monkey," when the wind has been tempered by crossing a stretch of comparatively warm sea; so what must that wind be like where it picks up its original temperature?

"The Lord tempereth the wind to the shorn lamb"—which, by the way, is not a Scriptural quotation—but He also arranges that the said lamb shall have a good crop of wool by the time the wintry winds do blow, and, unfortunately, Mr. Thomas Atkins has not developed the faculty for growing wool at opportune seasons. Therefore it is the business of those who stay at home to see that Mr. Atkins, whether armed with a rifle or a spanner, has sufficient wool for the winter, and as many of the other comforts of a home as possible.

We who are concerned with aircraft are naturally more concerned for the welfare of the Royal Flying Corps than any other branch of the Service, and I therefore ask every reader of this paper to do his or her utmost to help in making the R.F.C. as comfortable as possible.

In the course of the last two or three weeks I have had a number of letters from people of all sorts asking how they can send things to the R.F.C., how they should address parcels, what things are most needed, where certain things can be got, and so forth. Therefore it may be well to deal with the subject at some length.

Where to Send.

Last week an appeal was issued by the ladies connected with the R.F.C. to all those interested in the Corps for gifts of warm clothing, tobacco, cigarettes, etc., or contributions of money for procuring such articles for men now serving with the Expeditionary Force.

All contributions should be sent to Mrs. Carden, The Moorings, Fleet, Hants, or to Mrs. Barrington-Kennett, Lynwood, Farnborough, Hants. Major Carden, R.E., is a Squadron-Commander, R.F.C., and Captain Barrington-Kennett was the first adjutant of the Corps, and is now a Staff Captain at the front, so one may rest assured that their good ladies at home will see to it that everything contributed will reach the Corps in the safest and most expeditious way.

The postal service to the troops abroad is, of necessity, a trifle erratic, though it works wonderfully well, considering all things, and now that our troops are advancing slowly and steadily there is more certainty about it than there was during the great "wash-out" from Mons to Meaux, when the Army was crumpling back its own lines of communication. Nevertheless, there is, I think, more certainty about goods being delivered if they are sent direct to Mrs. Carden or Mrs. Barrington-Kennett, for instead of going in small parcels which may be lost in the post, the contributions will be sent in big batches, either being taken, when occasion permits, as Service stores by detachments of the R.F.C. going out to the front, or else via the forwarding officer at Southampton

Docks with official labels—and those official labels may very possibly make quite a considerable difference in the quickness of delivery, for in the event of a shortage of wagons on lines of communication naturally Service stores take precedence of private parcels.

Therefore, it will be better for the recipients and more satisfactory to the donors of the gifts if everything is sent to one or other of these two ladies, instead of being cast upon the waters to find its own way to the R.F.C.

What to Send.

Mrs. Barrington-Kennett has been good enough to write for me a list of some of the things chiefly needed.

First of all come socks, thick socks, and lots of socks. Mrs. Barrington-Kennett suggests that the feet should be 11 inches to 12 inches long. It never occurred to me that the rank and file of the R.F.C. were such big chaps as all that, and I have never noticed any considerable number among them whose appearance suggested an ancestry of policemen; but I suppose the sizes required are those most in demand at the depot stores. Nevertheless, socks that are too big are, if anything, more uncomfortable than those which are too small, so it will be well to have a few pairs in each dozen for men who only have only nine- or ten-inch feet.

Next in the list come khaki woollen mufflers, 6 feet long by 1 foot wide. Here is a thing that any juvenile admirer of aviation can produce; any boy or girl who wants to be useful can knit or crochet mufflers, and there is nothing undignified about the job for any schoolboy who wants to be useful. I make this note because a young reader returning to school wrote the other day wanting to know how he could help. Nearly all sailors knit well, and I have travelled ere now with a distinguished officer of the Royal Naval Air Service who knitted vigorously throughout the journey while discussing high politics; the only objection I had was that the knitting-needles gave too much point to his arguments at times. Still, he was an artist at his job, and I would rather wear a pair of socks he had made than those turned out by any of my feminine relations.

Also, mufflers have the advantage that, when a kindly person wishes to give employment to a poor family, the juvenile members of that family can be put on to make mufflers while their mother is doing more difficult work.

The next items are Cardigan jackets, Balaclava helmets, and mittens. The first mentioned take a good deal of making, but the two last are within the capabilities of any ordinary woman who can knit. Shirts and body belts are not badly needed, at present anyhow, for the Army clothing departments turn out better shirts than those made by amateurs, and huge contracts have been placed with proper manufacturers of such goods, which are keeping their factories as busy as they can be.

Other things which are much appreciated by the men are chocolate (the hard stuff in cakes, not chocolate creams—despite Mr. Shaw's Swiss artilleryman), peppermint and bull-eyes. The last named are not required for targets; any Germans who happen around provide substitutes for that kind. Mrs. Barrington-Kennett refers to the kind made of toffee. One finds that the best kind of man, the one without vicious and perverted tastes, preserves his simple and childlike taste for sweets. Also sugar is nitrogenous and therefore fattening and heat-providing.

Also, there is a demand for pipes, tobacco, cigarettes, and pipe-lighters. There is always difficulty about sending matches, so the mechanical fire-providers which are filled with petrol, which is ignited by a steel wheel working on flint or carborundum, are better, especially as the men of the R.F.C. are always within reach of petrol.

Money.

As regards the supplies of sweetstuffs and smoking material, I do not particularly recommend that these should be bought by the givers, unless the purchaser is in a position to buy in large quantities at wholesale prices, for buying in small quantities means a waste of money, most of the price sticking to the fingers of that useless and inefficient parasite on society, the small shopkeeper. Of course, if an individual earnestly desires to send a pipe or a pipe-lighter to any particular officer or man as a personal present, that is another matter; but it is economically unsound to spend a sovereign on pipes when ten shillings of that is going into the till of the local tobacconist. Also, if one buys tobacco at a shop, one spends most of the money on Government duty, a very praiseworthy expenditure, but one which does not immediately assist the troops. For example, "Gold Flake" cigarettes cost 3d. a packet, but minus duty they are only 1d. per packet. Therefore it is better to send money so that the cigarettes and tobacco may be bought free of duty and sent out of bond direct.

Apart from this reason, Mrs. Barrington-Kennett particularly appeals for contributions of money, however small, as it is far more economical to order all manufactured goods direct from the manufacturer, which will only be possible if sufficient funds are forthcoming. Therefore I earnestly hope that everyone will contribute something in cash as well as in kind for this purpose.

There are, of course, a large number of people who, although they can afford to give money, wish also to do some work themselves, so that their contributions may entail some personal effort. This attitude is quite comprehensible, but I beg of them to try so to arrange matters that the work they do is not taking work away from poor people who must work or starve.

Also there are others who want to help and who are willing to give their spare time to the cause, but who cannot afford to give money. I know, for example, of a little maidservant in a small flat whose only personal interest in the R.F.C. is that she has waited on some of the officers at meals, but she is determined to do something for the Corps. Out of her small wages she buys wool, and in her spare time she knits assiduously. It would be a pity to spoil her pleasure in doing something for the country by insisting that she shall not take the bread out of the mouths of sock manufacturers. There are thousands, if not millions, like her, and, at any rate, they provide work for yarn-spinners when they buy their raw material.

The idiots to whom all sensible people must object are the women who could well afford to run about finding families in distressful circumstances and setting them to work to make woolly things generally, but who spend their time sitting at home doing work which they can well afford to pay others to do. One even hears of such women dismissing servants so as to be able to spend more money on materials, or persuading their servants to give up their "evenings out" and spend the time knitting or making shirts.

Certain Difficulties.

A few days ago I had a very charming letter from a lady at Oxford on this subject. She agrees that it is well to give employment to poor people when possible, but adds, "The only thing is that it becomes so expensive when we have to pay rather exorbitant prices to rather indifferent workers—as is almost always the case. If we had a grant of money for materials it would be different, but to supply both money for wool and flannel, and employment, is rather expensive, especially as everybody is glad to work gratis for the wonderful Corps if one can supply enough materials." This lady also puts an interesting supplementary question when she asks: "Also, I wish to know whether it would be well to employ the Belgian refugees, of whom we have so many?" Later

this lady adds: "These poor people are being awfully well looked after here. We do think of the Belgians because such quantities of them have come here, and we are beginning to wonder how we are to manage about them."

Another interesting point is raised when she says: "You know, we sent so many recruits from here, and the War Office cannot get through all the work for them quite immediately, so the men—most of whom came out of good offices and comfortable cottages—were so in want of proper food, blankets, and other warm things that we forgot to hunt up other women to do the work, and hurriedly sent of our own contributed things, to be in time to prevent our local men from getting bronchitis or pneumonia, as so many recruits, I believe, have done." This, of course, is a question of acting promptly and very properly in an emergency, and does not apply to the R.F.C., except in so far as everyone who has a friend in the R.F.C. should make a point of sending him something useful in case the War Office supplies run short at any odd moment, owing to the breakdown of a transport wagon delaying delivery, or to some less loved corps raiding a supply wagon on its way up country—such things do happen on active service.

Obtaining Supplies.

Naturally, one of the difficulties of giving out orders for the making of "woollies" generally is the placing of those orders with deserving cases only. Unhappily, the women who get the most help are frequently those who are simply born cadgers, who spend their time whining for relief, while the self-respecting poor women are ashamed to ask for alms and do not know where to go to look for work. Also, thanks to our futile educational system, under which Board School children are taught everything except what is useful, the poorer class of woman has a very hazy notion of knitting and sewing, and a still hazier idea of how to feed herself and her family most efficiently on very little money. A French or German peasant family would grow fat on a wage on which a British family (English, Scottish, or Irish) would starve.

The cadgers do well because the well-to-do woman is generally so easily imposed upon. I well remember how a rural cynic whom I met on the road one day in Ireland during the Boer War summed up the situation. In answer to a question as to how the women and children of the Reservists were doing, he replied: "Begob, sorr, they're doin' foine. Whin the min were at home they were airnin' eighteen shillin's a week and dhrinkin' tin out o' that, and every woman was feedin' her man and herself and the childher on the other eight. Now the women are gettin' about tin shillin's from the Army, the relief funds are feedin' the whole family, the ladies at the big house beyant are keepin' the childher in clothes, and with the tin shillin's in their pockets the women are dhressin' like ladies and dhrinkin' like —," well, I will not say how he expressed the way they were drinking, but he evidently set no high value on their moral characters.

Just by way of proving that the remark is not only applicable to Irish women of fourteen years ago, I would draw attention to a report in the "Morning Post" last week of a meeting in the City of London held to discuss relief work. Dealing with the chairman's remarks, the report says: "He had taken extracts from the official reports and he found that nine boroughs complained about women frequenting public-houses. It was pathetic that about a third of London was complaining about drunkenness among women. The explanation might be that women were suddenly getting money into their own hands and had lost the influence of their husbands." The explanation probably is that the consumer of alcohol has been called up as a Reservist, or has enlisted through being out of work, and with his pay, aided by ill-considered charity, the women are indulging the depraved tastes they have acquired through our rotten educational system.

Now it is just this type of woman who must be prevented from getting exorbitant prices for indifferent work. She would be vastly better in a workhouse or in a concentration camp, or in an industrial colony where she would be away from drink and would be taught to work. Yet it is this very type of woman who gets the relief, because she has no shame about asking for it at the offices of relief committees. And it

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is just to avoid this evil that I suggest that women who can afford to work for nothing should spend their time going round finding out where cases genuinely worthy of help exist, for these are the very women who will not hang round relief offices to be snubbed by officious secretaries. It is no use starting out on door-to-door slumming expeditions, but the shopkeepers in the poorer districts can generally tell of decent poor women who struggle to pay their grocer's bills, and little cheap dressmakers can either do with work themselves or can tell of hard cases among their poorer customers. Approached indirectly in such ways, the deserving poor can be reached, and it is to such women that orders should be given by people who can afford to pay for garments to be made.

The Belgian refugees are being very well looked after by special committees, and very rightly too; but there is always the danger of our own deserving poor being overlooked, and that is why I want readers of this paper to pay for work rather than do it themselves. "Blackleg" industry is every bit as bad as "sweating."

Those who want information about how to make "woollies" can obtain full instructions from the British Red Cross Society, 83, Pall Mall, S.W., and I venture to suggest that those who can afford the time and have the energy will do well to establish workrooms, or, at any rate, depots for the collection of goods in their district, so as to avoid sending numbers of small parcels to Farnborough. Mrs. Barrington-Kennett advises that large parcels should be securely sewn up in canvas.

Two Views.

If we must, after the English custom, conduct this war with a Nonconformist conscience and insist that our part in it is a judgment on Germany instead of simply a natural fight for national existence, we might at least be consistent.

It will be remembered that during the first week of the war various papers told with appreciation the story of an heroic French aviator, who was brought down by engine failure somewhere in Alsace, and, on the approach of some German cavalry, stood beside his machine as if to surrender. When the German officer rode up to take him prisoner he shot him dead with his revolver, jumped on the officer's horse, and escaped amid a hail of bullets. This was called by the British press a "French Airman's Plucky Exploit," or similar title. Alongside this one may put the story issued officially by the Press Bureau, and published by various papers on October 1st. This story tells how two German Dragoons were surrounded by eight French infantrymen. When the French sergeant came forward to receive their carbines, one of them shot him through the head and galloped off.

The story is taken from a German pamphlet seized by the British Custom House. It is composed of letters from German soldiers and issued by their Government to cheer up the German people, and in it the episode is called a "Bold Cavalry Trick," and is spoken of as a gallant stratagem. The Press Bureau gives it as one of three stories illustrating "the praise and self-congratulation of the writers on deeds of gross treachery and cruelty claimed to have been done by the writers themselves or their comrades."

To an unprejudiced observer there does not seem to be much difference between the Frenchman's sporting effort and the German's, and one is inclined to agree with a remark made a few days ago that when a "scoop" is pulled off by one's own side it is strategy, and when the other side pulls it off it is treachery. If the Press Bureau cannot discover better examples of German treachery than the three published on October 1st, it would do better to revert to its original silence.

Against these stories one may remind readers of a German aviator's own story, sent to this paper from our Danish correspondent, of how the machine in which he was observer was shot down and smashed up on landing, and how handsomely he acknowledged the kindness with which he was treated by the French troops from whom he afterwards escaped. This showed a properly chivalrous spirit on both sides.

Taking it all round the Press Bureau seems little improved by Mr. F. E. Smith's retirement into the obscurity of active service. If the authorities had had the sense to appoint a thorough sportsman and gentleman, like Mr. E. B. Osborn,

All parcels should be sent to Lynwood, Farnborough, where, presumably, the chief collecting and dispatching depot has been established.

A Direct Appeal.

It is not often I make a direct personal appeal to the readers of this paper, but on this occasion I do so. Everyone who reads the paper has at one time or another been entertained or thrilled by the exploits of one aviator or another. It is not much to ask that in return for that entertainment he or she should give some article or a small sum in cash for the comfort of the Royal Flying Corps on active service. The school-boy's sixpence is as welcome as the wealthy man's cheque.

Practically every one of our pilots is on active service in one way or another. The popular fliers at Hendon and Brooklands, and the mechanics who made their flights possible, are serving the country at home or abroad. If the mechanics of the R.F.C. are not kept warm and well fed and comfortable they cannot do their work properly, and the lives of the pilots are thereby endangered.

It is for their sake I ask that everyone who has been amused or instructed, or annoyed, or irritated, or insulted by THE AEROPLANE (one notices that people go on reading it just the same) will put their hands in their pockets and send to Farnborough (Lynwood is the address) some gift in cash or kind for the Corps which saved the British and French Armies in the "great wash-out," and has played the guardian cherub up aloft ever since.—C. G. G.

of the "Morning Post"—I know him only by his writings, but judge him by those—instead of a babbling boulevardier like Mr. "Marmaduke" Jerningham, we might have hoped for useful and informative communiqués from the Press Bureau. The official comments on those three stories, all of which represent a perfectly fair and natural outlook on certain events from one point of view, could only stir up spiteful feelings based on hypocrisy, and are a disgrace to a Government department. By all means let us go out and kill Germans, but let us do it in a natural, sportsmanlike way, and not in a hypocritical spirit of artificially engendered spite.—C. G. G.

Police Notice.

The Secretary of State for the Home Department, under the powers conferred on him by Regulation 7a of the Defence of the Realm Regulations, 1914, has made an order which contains the undermentioned provisions:

In all brightly lighted streets and squares and on bridges a portion of the lights must be extinguished so as to break up all conspicuous groups or rows of lights: and the lights which are not so extinguished must be lowered or made invisible from above by shading them, or by painting over the tops and upper portions of the globes: provided that while thick fog prevails the normal lighting of the streets may be resumed.

Sky signs, illuminated facias, illuminated lettering, and powerful lights of all descriptions used for outside advertising or for the illumination of shop fronts must be extinguished.

The intensity of the inside lighting of shop fronts must be reduced.

In tall buildings which are illuminated at night the greater part of the windows must be shrouded, but lights of moderate brightness may be left uncovered at irregular intervals.

All large lighted roof areas must be covered over or the lighting intensity reduced to a minimum.

Lights along the water front must be masked to prevent as far as practicable the reflection of the light upon the water.

The aggregation of flares in street markets or elsewhere is prohibited.

In case of a sudden emergency all instructions given by the Admiralty or by the Commissioner of Police on the advice of the Admiralty, as to the further reduction or extinction of lights, shall be immediately obeyed.

The order applies to the City of London and the whole of the Metropolitan Police District, and to the hours between sunset and sunrise, and it will be in force for one month from October 1, 1914, unless sooner revoked.

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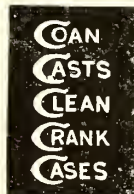
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From the "London Gazette," September 29th, 1914:—

War Office, September 29th. Establishments.

ROYAL FLYING CORPS.—Central Flying School.—Captain Archibald C. H. MacLean, the Royal Scots (Lothian Regiment), a flight commander and an instructor at the Central Flying School, to be a squadron commander. Dated September 18th, 1914.

Military Wing.—The undermentioned officers to be flying officers. Dated September 19th, 1914: Captain Harry T. Lumsden, the Queen's Own Cameron Highlanders, and to be seconded; and Captain John R. C. Heathcote, the Queen's Own Cameron Highlanders, and to be seconded.

TERRITORIAL FORCE.—Army Service Corps.—Mechanical Transport.—Cecil Le de Spencer Wynne-Roberts to be captain. Dated September 9th, 1914.

A Supplement to the "Gazette" of September 29th, published on September 30th, contains the following appointments:—

War Office, September 30th. Establishments.

ROYAL FLYING CORPS.—Central Flying School.—Captain Archibald C. H. MacLean, the Royal Scots (Lothian Regiment), a flight commander and an instructor at the Central Flying School, will be graded as a squadron commander, and not as stated in the "Gazette" of September 29th, 1914.

SPECIAL RESERVE OF OFFICERS.—The undermentioned officers to be confirmed in their rank:—Royal Flying Corps (Military Wing): Bentfield C. Hucks and Harold Blackburn.

From the "London Gazette," October 2nd, 1914:—

Admiralty, October 1st:

ROYAL NAVAL AIR SERVICE.—The undermentioned probationary flight sub-lieutenants have been confirmed in the rank of flight sub-lieutenant, and promoted to flight-lieutenant: Hugh Clarence Fuller; dated August 28th, 1914. Arthur Nickerson; dated September 14th, 1914. William Hayland Wilson; dated September 15th, 1914.

The undermentioned probationary flight sub-lieutenants have been confirmed in the rank of flight sub-lieutenant: John Philip Wilson, Harry Stewart, Denys George Murray, Eric Bentley Bauman, George Bentley Dacre, Norman Sholto Douglas, Ralph James Jean Hope-Vere, and Ralph Whitehead. Dated September 16th, 1914.

The undermentioned acting flight-lieutenants have been confirmed in the rank of flight-lieutenant: Lancelot Tomkinson and Geoffrey Rhodes Bromet. Dated August 1st, 1914.

The undermentioned probationary flight sub-lieutenants have been confirmed in the rank of flight sub-lieutenant: Frederick Melville Llewellyn Barr, Herbert Graham Wanklyn, and John Marten Rush Cripps. Dated August 1st, 1914.

War Office, October 1st:

SPECIAL APPOINTMENTS.—The appointments of the undermentioned are those of deputy assistant adjutant and quartermaster-general, and not as notified in the "Gazette" of August 25th, 1914: Brevet Major H. R. M. Brooke Popham, the Oxfordshire and Buckinghamshire Light Infantry, and Lieutenant B. H. Barrington-Kennett, Grenadier Guards. [Note to War Office.—Captain Barrington-Kennett has had his step from lieutenant for some time, so this notification is apparently another error.—Ed.]

A Second Supplement to the "Gazette" of October 2nd, published on Saturday, contains the following military appointments:—

War Office, October 3rd:

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—Captain Andrew G. Board, the South Wales Borderers (an instructor at the Central Flying School), is advanced from flight-commander to squadron-commander, and is granted the temporary rank of major whilst so employed. Dated September 9th, 1914.

The undermentioned, from flying officers, to be flight-commanders, and to be granted the temporary rank of captain. Dated September 16th, 1914: Lieut. Leonard Dawes, the Duke of Cambridge's Own (Middlesex Regiment); Lieut. Donald S. Lewis, Royal Engineers; and Lieut. Reginald G. D. Small, the Prince of Wales's Leinster Regiment (Royal Canadians).

The undermentioned officers, Special Reserve, to be flying officers: Second Lieut. Horatio C. Barber; dated August 12th, 1914. Second Lieut. William B. Rhodes-Moorhouse; dated August 24th, 1914.

SPECIAL RESERVE OF OFFICERS.—Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—The undermentioned second lieutenants (on probation) are confirmed in their rank: H. C. Barber and W. B. Rhodes-Moorhouse.

A Third Supplement to the "Gazette" of October 2, published on Oct. 5th, contains the following military appointments:

War Office, October 5th. Regular Forces.

COMMANDS AND STAFF.—SPECIAL APPOINTMENT.—Graded for purposes of pay as Staff Lieutenant. Dated September 22nd, 1914: Colonel H. S. Massy, C.B., retired pay, and Honorary Lieutenant-Colonel B. H. B. Barrington-Kennett, retired list.

CAVALRY.—RESERVE REGIMENTS.—The undermentioned to be temporary second lieutenant. Dated October 6th, 1914: Second Lieut. William Henry Charlesworth, from the Royal Flying Corps, Military Wing, Special Reserve of Officers.

NAVAL.

The following appointments were made at the Admiralty on September 29th:—

ROYAL NAVAL AIR SERVICE.—Acting Flight-Lieutenants: L. Tomkinson and G. R. Bromet confirmed in rank of flight-lieutenant with seniority August 1st.

Probationary Flight-Lieutenants: F. M. L. Barr, H. G. Wanklyn, and J. M. R. Cripps confirmed in rank of flight sub-lieutenants, with seniority August 1st.

The following appointments were made at the Admiralty on October 3rd:—

ROYAL NAVAL AIR SERVICE.—Mr. R. E. Penny has been entered as Flight Sub-Lieutenant, on probation, for temporary service, and appointed to the "Pembroke," additional, to date September 30th. Mr. A. K. Robertson has been entered as Flight Sub-Lieutenant for temporary service, and appointed to the "Pembroke," additional, for Eastchurch Naval Flying School, to date September 30th.

The Admiralty announced the following appointments on October 5th:—

Acting Flight-Lieutenant H. DelaCombe, to the "Pembroke," additional, for Farnborough Naval Airship Station, to date October 5th.

Messrs. T. Spencer entered as probationary flight sub-lieutenant and appointed to the "Pembroke," additional, for course of instruction, and E. I. M. Bird and G. W. Price, to the "Pembroke," additional, for course of flying, to date October 5th.

* * *

The Secretary of the Admiralty communicates the following for publication:—

During the course of the war the Royal Naval Air Service (Naval Wing of Royal Flying Corps) has not been idle, airships, aeroplanes, and seaplanes having proved their value in many undertakings.

While the Expeditionary Force was being moved abroad a strong patrol to the eastward of the Straits of Dover was undertaken by both seaplanes and airships of the Naval Air Service. The airships remained steadily patrolling between the French and English coasts, sometimes for twelve hours on end; while farther to the east, with the assistance of the Belgian authorities, a temporary seaplane base was established at Ostend, and a patrol kept up with seaplanes between this place and the English coast opposite. By this means it was impossible for the enemy's ships to approach the Straits without being seen for very many miles.

On one occasion during one of the airship patrols it became necessary to change a propeller blade of one of the engines. The captain feared it would be necessary to descend for this purpose, but two of the crew immediately volunteered to carry out this difficult task in the air, and, climbing out onto the bracket carrying the propeller shafting, they completed the hazardous work of changing the propeller blade, 2,000 ft. above the sea.

On August 27th, when Ostend was occupied by a force of marines, a strong squadron of aeroplanes, under Wing-Commander Samson, complete with all transport and equipment, was also sent over, the aeroplanes flying thither via Dover and Calais. Later this aeroplane camp was moved, and much good work is being carried out by aeroplanes, supported by armed motors.

Advanced bases have been established some distance inland, and on several occasions skirmishes have taken place between armed motor-car support and bands of Uhlans. All these affairs have been successful, with loss to the enemy in killed and prisoners. The naval armed cars and aeroplanes have also assisted French forces of artillery and infantry on several occasions.

During the course of these actions the following officers and men of the Royal Naval Air Service, Royal Marines, and Royal Naval Volunteer Reserve are reported as having been wounded:—Captain Cuthbert Williams, R.M.A., slightly wounded; Sub-Lieut. Alexander Nalder, R.N.V.R., wounded; Private Charles Farrant, R.M.L.I. (O.N. Portsmouth 8883), slightly wounded; Private Harper, armourer, seriously wounded; Leonard William Walsh, A.B., seriously wounded. All the wounded are doing well.

Commander Samson has performed distinguished services in this work. Captain Williams, R.M.A., is also mentioned as having shown much coolness and capability in a difficult situation.

Air reconnaissance by the naval airmen has extended for considerable distances into the enemy's country.

Squadron-Commander Gerrard is in command of a detached squadron of aeroplanes, and his machines have crossed the Rhine and made the attack on Düsseldorf, previously reported.

Good work has been done in dropping bombs on positions of military importance and railway communications.

It is indeed good to see that some of the work done by the Naval Air Service is being made known. Readers of THE AEROPLANE are more or less in possession of the leading points in this communiqué already, but the details, which it was not at the time advisable to make known, are of high interest. One hopes ere long that the Admiralty will see their way to make public something of the equally good work done by the East Coast seaplane patrols, the seaplanes on board certain

ships, the land-going machines along the coast, and the seaplanes in the far North.

Where all are so good it is invidious to make distinctions, and one would like to know the names of the officers who have done good service in these various branches, which, though perhaps less showy, are quite as valuable as raiding with armed motor-cars, and, after all, pertain more to the Navy's own job. It seems peculiar that the commanders of land-going forces should be mentioned by name, while the officers responsible for the success of those highly valuable seaplane and airship patrols remain unknown to fame.

One would also like to know the names of the other officers who took part in the raid on Cologne and Düsseldorf, as the occasion was historic and their names deserve to be preserved. A fuller account of the whole incident is desirable.

Incidentally, one would like to point out to the compiler of this report that, if he were dealing with operations at sea, he would not, presumably, write that "sea reconnaissance by naval seamen has been extended," and that the parallel phrase, "air reconnaissance by naval airmen" is merely worthy of the halfpenny Press. The word "airman" has as distinct a meaning as the word "seaman." Sloppiness in the writing of official reports is strongly condemned by the best authorities.

* * *

For some days last week there were rumours in Service circles of the disappearance of two officers of the Royal Naval Air Service on patrol duty in the North Sea. On Saturday the "Daily Mail" published, on the authority of its Kirkwall correspondent, the statement that Lieutenants Vernon and Ash went for a flight in a waterplane on Tuesday and have not since been heard of.

Flight-Lieut. Vernon was one of the earliest of Lieuts., R.N., to be appointed to the Naval Air Service, and appeared as third in the R.N.A.S. Seniority List of Flight-Lieutenants when that document was published. Flight-Lieut. Ash was a considerably junior officer, appearing thirty-third on the list. One hopes to hear that they have been picked up by a ship—even if a German vessel.

* * *

Squadron-Commander Longmore having gone away on special duty, Calshot Air Station is now under command of Flight-Commander Travers. A large amount of work is being



Photograph by F. N. Birkett, Shepherd's Bush.

"TEACHING THE YOUNG IDEA."—Left to Right. Standing: Flight-Sub-Lieuts. E. R. Moon, B. W. Hart, Haines, T. H. England, and Field. Sitting: Flight-Sub-Lieuts. Giles, Rosher, and Strong, Sergt.-Instructor Healey (Royal Marines), Flight-Sub-Lieuts. Perry, Allen, and Riggall.

done by the numerous recently-appointed officers from various schools, who are undergoing seaplane instruction. "Pusher" biplanes predominate, these including the new Avro, and various Farman and Wight machines, but Sopwith tractors and Curtiss boats (built by White and Thompson, of Bognor) are also in use.

Some of our naval aviators are adepts in the art of "leg-pulling," but one need not accept as a verbatim report the story told of one of them by the "Daily Chronicle" correspondent at Deal on October 5th, which runs thus:—"One of the British flying heroes, Lieut. Rainey, yesterday crossed the Channel from France in a much-damaged machine, thus completing in a fitting manner a series of thrilling adventures which have betaken him since he last left English soil. Lieut. Rainey has been engaged for the past three weeks in reconnoitring at the front, and so little leisure has he been able to snatch that, as he told his friends here, during the whole of that time he could not remove his clothes or even secure a wash. He had two machines disabled by rifle and shell fire, whilst a third caught fire in mid-air. On each of these occasions he very narrowly escaped a fatal disaster. His flights lasted for many hours together, and on one occasion he was in the air for 24 hours at a stretch.

"Once when he came down he was so exhausted that he lay with his head on his aeroplane and fell fast asleep. On waking he was surprised to find that the puttee, boot and sock of one leg had been removed by someone who, as the lieutenant himself suggested, took the opportunity of his slumber to secure them as mementoes. Lieut. Rainey brought home with him a German helmet belonging to a man he shot, and he proudly claimed that it was the first trophy of the kind taken by a British airman. After securing a new machine, Lieut. Rainey is returning to the front."

The "Daily Mail" gives much the same story, but did not quite swallow the 24-hours' flight. The possession of the helmet is attributed to the attempt of a straggler from the German army to shoot the "flying hero" when on the ground, the German being evidently a relative of the French sportsman immortalised by "Punch" some years ago, who, when his host said, "Surely you aren't going to shoot a running pheasant," replied "No! I wait till 'e stop."

MILITARY.

The following passages in the descriptive account which has been communicated to the Official Press Bureau by an eyewitness present with General Headquarters, continuing and supplementing the narrative published on September 29th, deal with aircraft:—

The hostile artillery fire has decreased in volume and deteriorated both in control and direction. The first is probably due to a transfer of metal to other quarters, but the two latter may be a direct result of the activity of our aircraft and their interference with the enemy's air reconnaissance and observation of fire. Recently the Germans have been relying to some extent on observation from captive balloons sent up at some distance in rear of their first line, which method, whatever the cause, is a poor substitute for the direct overhead reconnaissance obtainable from aeroplanes. As a consequence, the damage being done to us is wholly disproportionate to the amount of ammunition expended by the enemy.

[One may deduce from this that the Germans have lost many of their best pilots, for there should be no lack of machines as yet, despite their losses having been heavier than ours. Also, no doubt many of their best men and machines have been withdrawn to the Eastern war area.—Ed.]

On Friday, the 25th, comparative quiet reigned in our sphere of action, the only incident worthy of special mention being the passage of a German aeroplane over the interior of our lines. It was flying high, but drew a general fusillade from below, with the result that the pilot was killed outright and the observer was wounded. By the aid of dual control, however, the latter continued his flight for some miles. He was then forced to descend by a hit in his petrol-tank, and was captured by the French.

[It is singularly unfortunate for the R.A.F. and its mouth-piece "Ornis," of the "Times," that General Headquarters

should have chosen at this particular moment to draw particular attention to the efficacy of dual control. One hopes to see a proper system evolved, for it is obviously wrong that a wounded pilot should mean the deaths of himself and his passenger.—Ed.]

Many camp yarns are now in circulation amongst the troops, mostly of an amusing nature. For instance, . . . The troops in second line at certain spots pass the time by punting a football about on the village "places." It is rumoured that a German aviator who observed this sent in a report that the British forces were thoroughly disorganised and running about their post in blind panic.

One gathers that the officer referred to in the official dispatch published last week as having been wounded in the course of an aerial duel with a German aviator is Lieut. Gilbert Mapplebeck, of No. 4 Squadron, R.F.C., and the King's Liverpool Regiment. Apparently he was hit in the trouser pocket by a bullet, which carried pieces of several French coins into his body, inflicting a very nasty wound, but one which is not considered to be dangerous. The reference made in the official dispatch to his previous good service will be welcomed by his friends, and one hopes that ere long he will have further opportunity of distinguishing himself. Meantime, one wishes him a quick recovery.

Col. H. S. Massy, C.B., whose appointment to what is practically an honorary post so far as pay is concerned, is Gazetted, will be remembered as one of the founders of the Aerial League and the prime mover in its useful activities. Colonel Massy had a most distinguished career in the Indian Army, and the writer believes he is correct in stating that it was Colonel Massy who with his own lips sounded the charge in the capture of the famous heights of Dargai, the only bugler available being a native who was physically incapacitated for the time being. It is, indeed, an excellent example to the youth of the country to see so distinguished an officer returning in a comparatively subordinate position to the assistance of his country.

Colonel Barrington-Kennett, whose appointment is noted, is the father of Captain B. H. Barrington-Kennett and Lieutenant V. Barrington-Kennett of the Royal Flying Corps.

It was reported last week from Paris that some of the British aeroplanes are equipped with wireless apparatus with which reports are sent while the actual reconnaissance of the German dispositions is being made, and the effect of our artillery fire observed and corrected. The correspondent says:—"It took only seven rounds to find one German battery exactly. After that a hundred shells more were fired. Then the aeroplane sent a message that the German battery had ceased to exist."

This is the first public intimation of the fact that we are using wireless. It is confirmed by the following statements.

An infantry officer who has returned wounded from the war area writes:—"Both sides seem to have hit on the same method of distinguishing their aeroplanes. The Germans have a big black Maltese cross on each end of the planes (the lower ones in biplanes) and a small one on the rudder. The French have a rosette of the national colours on each end of the planes. And the English have something which, so far as I could see, was a Union Jack, in the same place. These marks are easily visible through binoculars, and on a bright day with the naked eye, at heights up to about 4,000 ft.

"The majority of the German planes, which I saw (I was with the 1st Division) were Albatros or Rumpler. Though several were fired on both by our artillery and infantry, I only know of one which was brought down, and that by a machine-gun which was given the necessary elevation by propping it against a bank. I should say that part of the controls had been hit, as it came down anyhow. That was near a place called Wassigny, during our retirement.

"The Germans seem to have a special shell for use against aircraft. On bursting, it seems to scatter and leave about three distinct puffs of smoke which hang in the air for some time.

"Wireless has been used most successfully by us for directing artillery fire, but more machines so fitted are wanted. I have not yet seen any of our high-speed scouts. When going down to the hospital-ship at St. Nazaire I saw a crate marked 'Sopwith scout,' so perhaps they are getting some up to the front.

"I only saw one airship the whole time. That was on August 24th, when it was flying very low towards Maubeuge. I also saw a German captive observation balloon. I found that, through having been a constant reader of your paper, I was easily able to recognise German aeroplanes, which was of immense use."

* * *

An officer of the R.F.C. at the front wrote on September 8th to a friend in London:—"I have had quite a good time out here. An aeroplane is an extraordinarily good thing to run away in, and, as we have been doing that most of the time, it has been very convenient. I have done hardly anything. There has been no scope for my wireless, but I hope to get a show later on. I had some fun one day. I was plugged at by German guns and English rifles for about an hour, and finally was hit by one of their aircraft guns. It hit my engine, but didn't stop it altogether, and as I retired it made noises like a sick elephant. I managed to get back to our landing ground. It is rather fun being shelled, but I do not like bullets very much; they have a nasty, vindictive sound about them. However, one soon gets used to them, as Germans, French, and English all fire at one indiscriminately. We have had great luck; hardly any casualties, though nearly all the mechanics have been hit."

* * *

One of the quaintest stories which has yet come home about the Royal Flying Corps concerns a certain pilot who took up a Staff officer as passenger. As the machine passed over the German lines a chance shot, which luckily missed the machine itself, carried away an aileron on one side, whereupon the pilot turned round and by a clever piece of rudder work got safely back to the landing ground near the Headquarters Staff from which the air scouts were operating. As soon as he landed the Staff officer jumped out of the machine, wild with rage, and rushed off and reported him for cowardice in the face of the enemy, thinking that he had funked carrying on after the machine had received a trivial injury. It took quite a lot of explanation to make the Staff officer see that he really

ought to thank the pilot for a very fine piece of flying and for getting him back alive. Controlling a fast tractor machine minus an aileron is not much less difficult than bringing a car home on three wheels.

* * *

Writing in the "Observer" on Sunday last, Mr. C. C. Turner delivers himself of an opinion which is apt to lead to serious misconceptions. Says he:—"There is one reason why they [the War Office] should make use of civilians who have experience of flying and all that pertains thereto. The Royal Flying Corps still possesses a large number of officer-pilots who have not yet been sent to the front, or if sent there are occupied with transport, organisation, and other terrestrial labours, and are not actually flying. Would it not be well to put civilians on all that sort of work so as to liberate the regular flying officers for the task for which, in the writer's sincere conviction, they are far better adapted than any save the most brilliant and gifted civilians? Most of the civilians who have offered their services have made no stipulation whatever as to the nature of the work they are to do; they simply desire to be useful. Of course, there are civilians who have already proved their value at the front as pilots, taking observation officers up as passengers."

The paragraph shows a lamentable lack of knowledge of military affairs in general and those of the R.F.C. in particular. Practically every officer-aviator who is an efficient pilot is at the front, except some few whose special ability as instructors or organisers makes it necessary to keep them at home to train fresh drafts. As a general rule, civilians would be most injurious to the Corps if put onto "transport, organisation, and other terrestrial labours," for it takes at least six months to knock a sense of law, order, and decency into any civilian who has ever had anything to do with aviators or aerodromes—with the few honourable exceptions of men who happen to have been born soldiers—though if by "terrestrial labours" one is to understand that the use of a spade is implied, one might agree. Further, there are in the R.F.C. a good many officers who are of the highest value to the Corps on the ground, but who would never make good pilots. One may assume that the Squadron Commanders on active service know how each officer may be employed to the best purpose. One may assume also that it is the intention of the authorities to give every pilot now at home the opportunity of taking his turn on the Continent so that he may qualify for his medals.



A DISTINGUISHED VISITOR.—M. Blériot visiting his works at Brooklands last week. M. Chéreau, his British manager, is in the car.

The following letter, which appeared in the "Times," was written by an Army Service Corps requisition clerk of the 5th Divisional Train of the 2nd Army Corps from France:—

"Our aeroplanes are doing magnificent work out here, and have proved themselves absolutely invaluable during the campaign by the information they obtain and the timely warnings they are enabled to give. For instance, a week or two ago we had orders to proceed to a camp 20 miles from the point where we were resting for an hour. We had got about 15 miles on the road when a British aeroplane—one always accompanies our train—flew over our heads a mile away. It returned in about half an hour alighting just in front of our train. The pilot reported to our colonel that the camp that we were then making for was swarming with Germans! Just think of it! If that aeroplane had not warned us we should have walked into one of the nicest little traps that was ever laid, and what a capture it would have been for the Germans. Personally, I consider that our aeroplanes have been the means of saving thousands of lives during the war."

* * *

In a letter from the war area to Lady Castlereagh, dated September 25th, Viscount Castlereagh, M.P., says:—"The thing that has impressed me most here has been the aeroplane service, a splendid lot of boys who really do not know what fear is. The Germans shoot shrapnel at them, and you see the aeroplane like a dragon-fly in the air, and then a lot of little puffs of white smoke which are the shells bursting. Luckily the shots are very wide, and so far none have been brought down. One man was shot in the thigh by a German airman whom he was chasing. I watched for 25 minutes an aeroplane doing what is called ranging for a battery of heavy guns. The aeroplane watches where the shells drop, and then signals to say where the shells are falling, whether too far or not far enough. This aeroplane was being shelled by the enemy with shrapnel, and three times it flew round and showed the battery where they were shooting. The Germans must have fired forty shells. The aeroplane, about 5,000 feet up and easily in sight, looked like an eagle and about the same size, and the shells made a cloud of white smoke about the size of a cabbage. It was a wonderful sight, and if such a picture appeared in an illustrated paper no one would think it anything else but an imaginary one."

* * *

The "Telegraph's" correspondent, Mr. Morgan, writes:—"Only the General Staff is getting any pleasure out of this war, and it is an intellectual pleasure. . . . If I should make any exception to this rule, it would be in favour of the airmen. Flying is scarcely more dangerous in war than in peace. At a certain height the planes are protected from rifle-fire; and at least during an engagement an aviator is in the only position to watch the fighting safely, for the artillery is always far too busy with the enemy to pay any attention to an aviator overhead. He is, moreover, a free lance, sent out to see what he can and come back; at a battle one day, he is likely to be dining in Paris the next. Supposed to be the most perilous duty in modern war, flying has actually turned out to be one of the safest, as casualty lists have already shown. The airman has become the privateer of the hour." [At last the Press is beginning to realise what this paper pointed out over a year ago, that aviators in war have not the most dangerous of all duties to perform. Nevertheless, it is a mistake to say flying is "scarcely more dangerous in war than in peace." It is, in fact, very much more dangerous, but it is not so extremely dangerous as is fighting on land. To say that an aviator is a "free lance" and a "privateer" is pure nonsense. He has his definitely allotted duty as clearly as any other soldier, and if he "dines in Paris" it is only because he has gone down to fetch a new machine. —Ed.]

* * *

The difficulties of air scouts are well illustrated by the following incidents related by an officer returned from the war area, and printed in the "Telegraph":—

"On a recent occasion," he observed, "a number of airmen were sent out on reconnoitring duty over the German lines, their main object being to discover whether the enemy was being reinforced. They were absent several hours, but re-

ported on their return that there were no abnormal movements of the Germans, except that for some miles in their rear there was an enormous number of transports—miles of them—proceeding rapidly to the front.

"This incident was reported to headquarters, but was not deemed sufficiently complete, and immediately day broke on the following morning the airmen again rose and passed over the enemy's lines. They then found that reinforcements to the number of three army corps had arrived during the night, and were rapidly taking up their positions for attack.

"It was quite evident to the flying men that the miles of covered transport wagons which they had seen proceeding to the front on the preceding evening were packed with German soldiers. The important news was at once conveyed to the British and French commanders, and necessary measures were taken on our side to meet the new condition of affairs."

An extraordinary case of a whole German army corps being lost by our scouts occurred. "Two German army corps," the officer continued, "were observed by the British scouts to be marching to the woods at Vermand, and a sharp lookout was kept to observe the direction they took. Subsequently one corps was seen to reinforce the German troops at St. Quentin, and the other was completely lost sight of.

"It is supposed that the men concealed themselves in the forest at Vermand, where they could be observed neither by aircraft above nor by scouting parties on land. Probably the soldiers left the woods in small numbers at different times, and joined the main body at a previously arranged rendezvous. Such an incident would, of course, greatly confuse their opponents. A similar disappearance of an army corps took place some time ago at the Forest of Compiègne."

* * *

His many friends will be interested to know that Mr. Howard Pixton, the winner of the Schneider Cup at Monaco on the wonderful little Sopwith seaplane scout, has given up flying, for the time being at any rate, and has been appointed to the Aeronautical Inspection Department of the Royal Flying Corps at Farnborough. He has done so much good work for both the Bristol and Sopwith firms, not to mention the Avro in its early days, that he is by now quite entitled to a shore-going job for a while. One wishes him every success in his new occupation, where his long experience of aeroplanes of so many types ought to be of high value.

* * *

One learns with interest that the military authorities are now recognising the fact that N.C.O.s may be very useful as pilots on active service. Sergeants Carr and Barrs, both late of the Grahame-White Aviation Co., have left for the Royal Flying Corps Headquarters in France, and one gathers indirectly that Sergeant Carr has already done a good deal of flying. There are still several first-class pilots holding non-commissioned rank in this country who might be equally well employed.

* * *

It is reported in various papers that a Boer general, General Joubert, has landed in France and has expressed the hope that he may be able to fight by the side of General French, whom he regards as the ablest and most remarkable of the English generals. Can this story have arisen through confusion with the name of an officer of the Royal Flying Corps, whose territorial affix—frequently mistaken by the English for a surname—appears to indicate his origin from a town "sous Jouarre" where much fighting has been done lately?

* * *

It is reported that after flying to Pewsey Police Court on October 5th, to give evidence in a case affecting his servant, Lieut. Gould, R.F.C., Netheravon, told the magistrate: "It takes ten minutes to fly here against three-quarters of an hour by road." He explained that he expected to be ordered to the front, and did not want to be away from headquarters longer than necessary.

FRANCE.

A French casualty list issued last week contains the name of Sapeur-Aviateur Noel, "Mort sur le Champ d'Honneur." One sincerely trusts that the deceased aviator is not our friend Louis Noel, and as there are at least three French pilots named Noel, it is possible to hope for the best.

One gathers that the Sapeur-Aviateur Pégoud has been doing quite a lot of good work since the beginning of the war, and manages to use up about a machine a week. Amongst those which he has successfully demolished is one of the new Blériot tractor biplanes built to the Sopwith designs.

A correspondent in Paris writes that M. Marc Pourpe is not, after all, a prisoner, as he had dinner with him in Paris after the paragraph referring to M. Pourpe appeared in *THE AEROPLANE*. It appears that M. Pourpe had a smash somewhere out in the country on a Morane parasol and so could not rejoin his unit for several days, hence it was assumed that he was a prisoner.

From time to time references have been made to the height at which it is safe to fly on active service, and it will be remembered that very early in the war this paper stated that nothing under 2,000 metres was safe, as it was pretty nearly within range of rifle fire. A correspondent in London has recently heard from Captain Oswald Watt that his Blériot Escadrille No. 30, of the French Military Aviation Service, is now at the front and that he had on September 27th made his first reconnaissance over the German lines. He says: "I can sympathise with the pheasants—the rocketers—and am thankful the German efforts were much like mine and all their shells burst behind us. I was over them for 2½ hours with a Blériot two-seater at 2,000 metres with a brave passenger. At 2,000 metres some of the 'special' shells burst at fully 1,000 metres above the machine."

One assumes that these would be shells from the latest type anti-aircraft guns, for 3,000 metres means a height of close on 10,000 feet. From this one may judge that it is necessary to fly at about 6,000 feet to be out of rifle and ordinary shrapnel fire, and at that height one is fairly safe, because the chance of an aeroplane being hit by one of the special anti-aircraft shells is considerably smaller than the chance of being hit if anywhere within range and sight when on the ground. Owing to the clearness of the air in France, one can see as well at 6,000 feet as one can see at about 3,000 in this country.

The Bordeaux correspondent of the "Times," writing on October 4th, says:—"Just as the army of spies left behind has kept the enemy well posted as to the position of the batteries and the range of the trenches, so the aircraft of their armies have reported on preparations to the rear of the Allied Armies. The information of their air services is the cause of the transference of German troops to the enemy's right flank. The recent visits of hostile aeroplanes to Calais and Boulogne assuredly had more in view than the maiming of old men and women and explain the reinforcement of the enemy in the angle of the flanking movement and the vigour of their attacks upon Roye. Those attacks are not making much headway, and the Germans are apparently unable to stem the sure advance to the north.

The "Journal" publishes the experiences of a passenger on an aeroplane in war. The pilot, a famous civilian aviator, received at dawn the following orders from his captain: "You will convey passenger and despatches north to ——. Your orders are simply to get there. You must take no risks. If the enemy brings you down, destroy despatches and aeroplane. If you get through to ——, go at once to the General with your passenger, who will give him a verbal message. . . . Good luck."

The passenger continues: "While the pilot was inspecting his machine I took my seat with the despatches between my legs and a carbine slung along the fuselage on either side. . . . The machine rose. We started directly north, shaken a little by the wind, which caught us sideways. . . . Suddenly the pilot shut off the motor, and nothing was audible except the whistling of the wind through the wires. He turned to me and pointed out some little black puffs of smoke far below. He signed to me to listen, but I could hear nothing except the sound of the wind. Then the motor was started again, and its steady roar covered everything. The puffs grew nearer and more numerous. We tried to rise still higher, when a gust threw us on one side. The pilot righted us, but another and more terrible shock hurled us vertically upwards. Then we began to fall: the smoke and flahes were now quite near us,



Lieut. James Valentine, R.F.C., photographed at St. Cyr
Capt. Watt, Commanding Blériot Escadrille No. 30, A.F.M

and we were thrown in all directions by great blasts of air. Still we flew ahead. Gripping the fuselage, I awaited the end, incapable of thought. Then suddenly calm was restored. We had passed the danger zone, and beneath us was a great forest, cut here and there with ravines.

"Hardly had we recovered our feeling of security than danger reappeared. Our aeroplane began to heel over. The pilot shut off the motor, and, turning his head, looked towards our left wing, where a strip of torn fabric was streaming in the wind. At once the headlong descent began, ending with an abrupt landing in a narrow clearing. Only this pilot could have achieved so desperate a manœuvre. Calmly he jumped to earth, shouting: 'Take your carbine while I repair the cloth,' and set to work to patch the torn wing. 'If the Boches come fire at them; and I will set the machine on fire and we will run for it.'

"While I watched the pilot continued his work. At last he told me to lift the tail of the machine, started to pull himself, and we bent double with our efforts to drag it to the other end of the clearing. But the roots and stones impeded, and we were about to abandon our task when suddenly the pilot leapt forward and thrust his revolver into the face of an unkempt, dirty man, who had approached unseen. I seized my carbine, but the man stood with his hands in his pockets and said: 'We belong to you; we are ready to guide our men through the forest. When the Boches arrived we hid. My friends are near and we will help. He called and a number of equally unkempt peasants stood round the aeroplane. In an instant we were ready to go. The propeller was started and we rose, but the trees opposite came towards us at a great pace and their height seemed to grow as we approached; it seemed that we could never rise over them. Suddenly with a bound that put us almost vertical we passed above them, and were once again looking down on the tree-tops. At the edge of the forest smoke puffs reappeared, but a turn enabled us to regain the cover of the forest and to gain altitude. When we came out again, lost in the sky, the guns had ceased, and, descending slowly, we landed in the French lines."

The "Petit Parisien" published on October 3rd a telegram from Compiègne saying: "For the last two days Taube aeroplanes have been flying over Compiègne. The German aviators have dropped incendiary bombs and explosives on the railway station and hospitals. The projectiles, which missed their objectives, caused very little damage."

GERMANY.

It was reported from Geneva on September 28th that the Zeppelin factory at Friedrichshafen is now working day and night to replace the airships which the Germans have lost during the war. A triple staff has been employed. Two Zeppelins of the armoured type and of great speed are now under construction. The factory is guarded by a Bavarian regiment and by a gunboat on Lake Constance. It will be remembered that last week or the week before the debut of Zeppelin No. 26 was reported. These two will thus be Nos. 27 and 28, and there may be No. 29 coming through at the Potsdam Wharf, so we still seem a long way off those 50 Zeppelins, especially when one remembers that all the old and useless, and all the early smashed-up Zeppelins are included in the No. 29.

Interesting details of German aerial activity were reported by the master of the Dutch trawler "Martha" at Grimsby. He stated that while fishing thirty miles from Helgoland on September 23rd seven German hydro-aeroplanes circled round his vessel, but, after satisfying themselves as to his nationality, they flew away. They then stopped a steamer, which he believed to be the Swedish steamship "Bodel," which was proceeding on a course east by north. The Germans made her captain alter his course to south-south-east, which would take the ship to Helgoland, and six of the aircraft escorted her in that direction apparently a prisoner.

The story may be true, but seven seaplanes at Helgoland seems a large proportion out of the small fleet of such aircraft owned by Germany.

The "Times" reports that Count von Zeppelin is said to have had an enthusiastic reception when he passed through Essen last week on his way to "the front." He was bombarded with questions, and especially with appeals "not to forget the English." On this last point Count Zeppelin promised "to do everything that was in his power."

RUSSIA.

Details of the destruction of Z 5, given in the "Bourse Gazette" are reported in the "Telegraph" as follows:—"Our cavalry brigade, with a horse battery, was near Soldau. A German airship was seen steering for us from the direction of Mlava. As the commander of the battery was at that moment with the chief of the division at the tail of the column fire was at once opened at this enticing target, but the shots appeared to fall short. At the third volley the airship began to assume an inclination. This, as was shown later, was due to the breaking of the stabilisator and rudder by our fire. However, the airship continued towards the German frontier, and disappeared behind a wood. Without losing a moment the guns were taken round the wood at the gallop, and renewed their fire. On the way the airship flung bombs at them, but without success. It then directed a machine gun upon them, but the bullets fell short.

"From the new position only one volley was fired, as the dirigible stopped, and then was carried back by the wind towards the south. Quickly the battery galloped back to its first position, whence the airship was finally disabled, and compelled to descend within three miles of the village of Lipovitz. When the cavalymen reached the airship they found they had been anticipated by a Cossack patrol. The prisoners taken were the commander of the Zeppelin, Captain of Airship Battalion Gruener, Lieut. Wilhelm Rehling, a mechanic, and four soldiers. One officer and two lower grades somehow had time to hide in the neighbouring village, but were discovered on the following day. Thus the whole crew of ten were captured.

"Only one officer and soldier were wounded, but the apparatus had been badly damaged in the air. The rudder, propellers, benzine tubes (petrol pipes), motors, and stabilisator had all suffered, and the hull had been pierced in several places. According to the admissions of Captain Gruener, the airship was vitally injured by our first discharge, but its dirigibility was completely destroyed by the fire from the second position. When our artillery commander asked, 'How could you dare to steer so impudently direct for our battery?' Gruener replied that he had more than once been under cannon fire, and had always come out successfully.

"The hull was eventually blown up by our cavalry, but a large number of trophies were carried off. They included an army flag with the name 'Zeppelin 5,' and the embroidered Prussian eagle insignia of the order 'Pour la Mérite,' two machine guns, a machine rifle, four motors, many plans, maps, sketches, documents, photographic apparatus, and forty signal rockets. All the bombs had already been used."

It is reported by Mr. Norregaard of the "Daily Mail," from Petrograd, that a Russian aviator with an officer flew over the enemy's territory, but was obliged to descend, owing to a faulty engine. Both were dressed in leather overalls. While adjusting the engine an Austrian N.C.O. and seven men appeared. Resistance was impossible, as the aviators had only revolvers. The officer decided to pretend to be an Austrian, and, shouting at the top of his voice, ordered the N.C.O. to come to his assistance. The man, imagining him to be an Austrian officer, hurried to carry out the orders. The engine started and the Russians flew off, dropping a piece of paper thanking the Austrians for aiding Russians.—[A remarkably clever piece of work. It would be interesting to see how a similar example of "slimness" would be described by the Press Bureau if carried out by a German pilot.—Ed.]

BELGIUM.

A Zeppelin airship was reported on the night of September 30th, successively over Moll, Rethy, Turnhout, Bourz-Leopold, Merxplas, Brecht, Poostmalle, and Westmalle, and at 3.30 a.m. on October 1st it dropped bombs near Fort Brochem but inflicted no serious damage. It then approached Antwerp, but was put to flight by the forts.

The "Express" reports that in the defence of Antwerp on September 30th, British aviators did splendid work for the Belgians. Flying in and out among the low clouds, they indicated the German positions to Fort Waelhem and enabled the gunners to direct a withering fire on the attackers.

The "Morning Post" correspondent in Antwerp reports that our aviators, who have made in all ten reconnaissances, have as yet found no indications of great masses of infantry. In aerial reconnaissances one very plucky Belgian feat is to be recorded. This aviator, flying very low over the German position, was heavily bombarded with shrapnel. He retreated, rose to a greater height, and then returned to his reconnaissance. The balance of the evidence is in favour of regarding the German attack as an artillery demonstration intended to intimidate.

The "Handelsblad's" Antwerp correspondent, telegraphed on October 1st, regarding the bombardment of Lierre by the Germans, that the shelling of the town began at seven o'clock, after the Germans had received information from a biplane which the Belgians had mistaken for one of their own aircraft.

Reports from Antwerp describe an aerial combat between a Taube and a Belgian biplane occurring right above the centre of the city on Friday last. The Taube had chased the biplane to this point, the Belgian pilot apparently persuading the Taube to come within range of the forts. The Taube carried a mitrailleuse, and the Belgian pilot, with only an automatic pistol, found himself unable to strike effectively at his foe. When over Antwerp, the Belgian began to descend, and the Taube daringly followed him down until he found himself ringed with bursting shrapnel. Promptly he rose again and flew away to the south-east. Falling shrapnel bullets caused one little girl to be slightly wounded. The encounter was witnessed by practically the entire population, who crowded every point of vantage when they heard the sound of the guns.

The Antwerp correspondent of the "Morning Post" reported on October 2nd an interesting aerial incident, as follows:

"I witnessed to-day from outside Lierre a most interesting aerial engagement. A little after four a biplane rose out of Antwerp and headed for the German lines between Willebroek and Heydonek. These machines fly with almost incredible swiftness. This one passed a fast motor-car going in the same direction as easily as a swallow passes a sparrow.

"As soon as the aeroplane got over the German lines, where its object was apparently reconnaissance, it came under fire of the German guns specially designed to attack aviators. Two

of these guns engaged the aviator. They fired first ranging shells, which, on bursting, left a thick ball of black smoke. These shells, apparently fired with a difference in elevation of 500 ft., were designed to ascertain the elevation of the aeroplane, but the aeroplane seemed to shape its course so as to avoid passing near the smoke balls, which were in any case at a greater height than itself.

"The German guns then began with shrapnel fire as if satisfied with the information given by their ranging shells. Twelve shells were fired, all at a greater height than the aeroplane, as if the design were to scatter balls on it from above. Changing its course occasionally the aeroplane flew about, completed its work, and winged its way back to the Belgian lines."

The reference to the high speed of the machine almost appears to indicate that it was a R.N.A.S. scout, and it would be like a naval aviator to fly low and trust to his speed to save him from being hit, instead of flying high and out of range. If he was at a reasonable elevation the bursting of the shells above him seems to confirm Capt. Watt's estimate of the high range of the German anti-aircraft guns.

It is reported that on October 4th a Taube monoplane flew over Antwerp and dropped proclamations saying that the troops should surrender, because they were fighting for the princes of Russia, whose sole desire was to extend their territory, and for British capitalists. They ought to surrender to a country who asked nothing but peace and the good of Belgium. The proclamation added that there was not a single Russian in the whole of the German Empire, that the German armies were continuing uninterruptedly their advance on Paris. The inhabitants should not believe the Antwerp newspapers, which were in the pay of England and France.

The "Telegraph" gives the following extract from a lady with the English Red Cross detachment in Antwerp. Writing on September 29th, she says:—"After dark the other day there was a report of some sort—somewhat unaccountable. People put out their lights, while others flew to the cellars. A Zeppelin! And what do you think it was? A harmless lady beating her carpet. I can't forget it; it was so funny."

An English governess in Antwerp writing to her parents at Newcastle, is reported by the "Chronicle" as saying:—

"The Zeppelin is terrible. Shall I ever entirely forget the first crash that awakened me? It was like a double thunderbolt, and was followed by weaker crashes as the machine passed further away.

"Then the cannons at the fort close by started, and the house trembled and the soldiers fired their rifles.

"But I forgot to mention the sound of the Zeppelin. It sounds like five aeroplanes flying at once. The noise to me was horrid. Zeppelins are machines of the devil himself."

[To which one may add that all weapons of war are, of their nature, machines of the devil.—Ed.]

ITALY.

In the course of a trip over Lake Como about the middle of September the Usuelli dirigible managed to get her nacelle into the water. Unlike other military dirigibles her passengers are not accommodated in a seaworthy boat-hull, so dire results nearly occurred, the least of which, a premature cold douche in full uniform, was probably the most disagreeable. The incident was put down to the wind, officially. Beyond bending some of the tubes supporting the bearings for the transmission to the propellers little damage was done, and your correspondent had an excellent opportunity of satisfying his laudable curiosity as to the vessel's control arrangements.

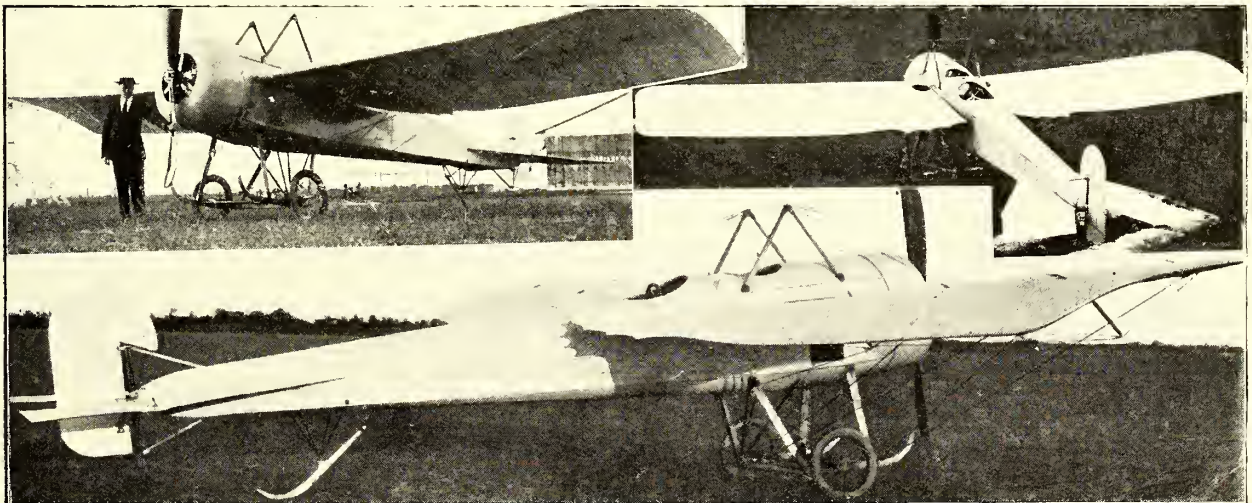
The striking point about these is their number and position. Under the unusually blunt nose of the gas bag is fixed an horizontal empennage of notable size, while to the rear of the nacelle an enormous biplane elevator is attached, and so works in the propeller draughts. From a point a few feet farther towards the stern a large vertical empennage leads back to a huge Voisinlike box-kite, the curtains of which compose the rudder. The keel of the vessel to which these organs are attached and from which the nacelle is slung is a complicated girder steel tube construction.

As I wrote some years back of the first of this type, "The Usuelli dirigible is exceptionally controllable." I have now learnt why. She has since done a successful trip to Turin.

The photographs of the latest De Antoni monos are, as I think all will agree, quite interesting, as they show the new wing plan and the flexing extensions, the point of the patent. The wings are not warped, but a variation of the camber is effected. Whatever may be thought of it on principle, its continued use for over 6 years in far from favourable conditions without incident cries aloud. As in Taube types kingposts are used—abundantly, too—under the wings.

De Dominicis has been going about looping on the Caudron recently, and exhibition flying in general has been continued much as usual up to now over here, but a new Order in Council shortly to become law is just out which forbids all flying without a permit. The permit may not be accorded to foreigners, and is to be obtained every day—i.e., for each singular flight. However, most of the civilians are trying to get the hang of the stiff regulations for their course of training at Turin under official supervision. The course was to begin in October, and seems likely to add another score of first-class pilots to those at the Government's disposal, as considerable incentive is held out.

Gianni Widmer, who, it will be remembered, repeatedly tried to accomplish the Trieste-Rome flight during the last month, and was the first to cross the Adriatic from his home—



The New "De Antoni" monoplane, an Italian machine with variable camber to the wings, to which Mr. Harvey refers above.

Trieste—to Venice, was called up to serve against the Allies as a motorman when the war broke out. His Blériot had previously been requisitioned, and he was not needed to fly it. Not being desirous of fighting in the front ranks he decided to desert.

Stowed away in a ship's hold he was so lucky as to get to Venice, whence, as every keen fellow would do, he ran over to Pordenone, where he got his ticket years back. Here, however, as a foreign subject hanging about round an Italian aerodrome, he had to be taken care of and boarded at Government expense for a night or so, what while requests and petitions were made unceasingly for him by the brethren and "old boys." Finally, he was released, his heart having been found sound if his passport was wrong. Widmer has since asked to be allowed to enrol into the Italian Air Militia. He is a pilot to be reckoned with in the event of war.

The recent tendency towards big machines has invaded, as was to be imagined, our Italian workshops; that of the Government the first. I am assured that a very big "avion" with three 100-Gnomes is well on toward actual flight at the ex-Caproni works.

Dr. Gobbi paid me a visit yesterday to show me how well his carbide lifebelt works. It is attracting a lot of attention at Venice and in the U.S.A. He hopes to have his waterplane, now fitted with a Rebus 60-engine, out on this Lake shortly. The submarine nature of its nacelle on which he expatiates escaped me somehow when I wrote you a description of the 'bus a while back; for which error I feel duly contrite.—T. S. HARVEY.

It is reported from New York that an agent of Italy has arrived there with a commission to purchase aeroplanes and high-power aircraft motors for his Government.

One of the Italian airships has been successfully employed in searching for mines sown by the Austrians in the Adriatic. This suggests that airships would be by far the best vessels to employ as mine-sweepers, as they can both look and sweep for mines, and are in no danger of being blown up in the process.

CHINA.

An official report issued at Tokyo on October 3rd says that a German aeroplane at Tsingtau twice attempted to attack the Japanese vessels, but without result. A Japanese aeroplane pursuing it attacked with bombs a captive balloon just being hauled back to Tsingtau. It is not known what damage was inflicted.

FROM DENMARK.

In the first number during the war of the well-known German aero paper "Flugsport" (editor, civil engineer Oskar Ursinus) many news of interest are not to be found. After some introductory editorial words, signed by Mrs. Hedwig Ursinus, the number brings two appeals from the Ministry of War and the Empire Naval Department for volunteers fit for the aviation service. Also a very fantastic announcement by the paper's Paris correspondent of a corps of "Franc-aviators" (just as franc-tireurs) formed in April, 1913, with the intention of flying in, over, and disturbing by air-bombardment Berlin by the beginning of the war between France and Germany (where the German invasion through Belgium was cleverly foreseen). There is, too, the following air-war calendar:—

August 2nd.—Hostile aeroplanes were observed on flight from Düren to Cologne, and one aeroplane was shot down by Wesel.

August 3rd.—At mid-night a French aeroplane manœuvred over the railway station in Frankfurt/a M. As it had already been announced from Darmstadt, it was shot at once by its arrival by the sentinels. Later on the aeroplane was found on the railway line Bebra, but the aviator had disappeared.

August 4th.—At the Austrian-Russian frontier a Russian two-seater Sikorsky biplane, with aviator and observer, was shot down by Austrian troops. Both were wounded and taken prisoner.

August 10th.—A French aeroplane tried several times to fly round Dienenhofen, but was brought down by German troops at Amanveiler.

August 11th.—A French aeroplane piloted by an officer was

shot down by Lichterfeld in Phalz by a regiment, which was just en route for that city. The officer got severe injured.

August 13th.—A telegram from Rörmund announces that an English aviator was shot down by Arsbech (Aachen)—Aix-la-Chapelle—he got wounded and was brought to Rheydt.

August 14th.—The Belgian pilot-aviator, Lieut. Tapproge, landed so violently after a flight to Namur, that the aeroplane was quite damaged and he himself very dangerously wounded (broken spine).

August 17th.—After Lutich had surrendered, the German soldiers when making their entry, got aware of a French biplane above their heads. They opened a shooting against it, but without result. In the meantime, a German Dove monoplane had started, and it was clear to see the French aeroplane's efforts to rise quicker, when it was hit by a shot and had to land in "vol plané"; both the aviator and the observer killed themselves.

August 18th.—A French aeroplane, which had flown across the Idsteiner Klotz, would return over Swiss land, but was shot down by the Swiss soldiers at the frontier, which shows the earnest will this land has to maintain its neutrality.

August 20th.—German infantry shot at a Russian aeroplane near Lück; its propeller was hurt and it had to land in the forest; both the aviator and the observer were killed.

August 22nd.—From Luxembourg is announced: In the night between Saturday and Sunday a French aeroplane appeared over the city of Luxembourg, clearly intending to destroy the railway station. Five bombs were dropped, two did not explode at all, and the rest did not much harm.

August 24th.—An Austrian patrol brought a Russian aeroplane down by Jezierzany; the crew, Colonel Martinon and a Captain, were brought to Lemberg as war prisoners.

August 27th.—French aeroplanes flew over Schlettstadt and the neighbouring cities, dropping bombs, which did no harm at all.

August 27th.—It is announced from Deutsch-Eylau that two Russian aeroplanes were shot down.

An Austrian officer-aviator had an engine stoppage on a patrol flight over Russia and had to land. By altering his uniform he was taken for a Russian by the farmers, and thus succeeded in escaping when he had finished his repair.

[This is an inverted version of the Russian story told elsewhere.—Ed.]

"Deutsche Luftfahrer Zeitung," 2nd September (the paper of German aviators) brings no interesting news but for an answer to an inquiry of the different aeroplanes used by the Army and the Navy, says that the Army has aeroplanes from almost every aircraft factory, and especially Dove monoplanes from Rumpler and eanin, and biplanes from Ago, Albatros, L.V.G., Aviatik and Otto. The Navy has several foreign hydro-aeroplanes and besides especially Albatros monoplanes.

THE AEROPLANE'S Danish correspondent renders two private telegrams from Rotterdam to Berlin; the first one, from Friday night, September 25th, tells that two English airships were over the Channel; they flew in the direction of France, and their destination is likely bomb-dropping on the German positions.

The other telegram, from Saturday night (September 26th), tells that some days ago an English aviator flew over Maasricht. A bomb was dropped from a considerable height, it exploded and caused much harm. The Dutch authorities made an examination on the place, and from a piece of the bomb it was stated that it had been an English one. The English Ambassador at the Haag appeared hereafter at the Minister's of Foreign Affairs, declaring that the English Government was, of course, willing to indemnify for the harm caused by the bomb. The Ambassador excused the case and told that the bomb, destined, of course, for the Prussian positions in Belgium, had been dropped involuntarily.

The participation of the Danish Schleswegians in the war, fighting in the German Army, is followed from Denmark with the greatest sympathy. Among the Schleswegian names in the dead list are among others one, Sub-Lieutenant Emil Yepsen, who was hit by a piece of a bomb, dropped from a hostile aeroplane, when on duty on the 13th of September in the village Meully, 23 kilometres from Soissons.

Accelerated Aircraft Production.—II

One of the most important things in the accelerated production of aircraft as a whole is that the acceleration in production of propellers should keep pace with it, and one is glad to find that the propeller makers in this country are thoroughly alive to the situation. A few days ago the writer had the pleasure of visiting the works of the Integral Propeller Co. at Elthorne Road, Holloway, and found there the same steady acceleration of production without hustle which characterises all the best firms connected with the building of our aircraft.

Integral propellers built to the designs of the famous M. Chauvière have always been famed for the quality of their workmanship. On that M. Chauvière insists, and the managers of the British Integral Co., Mr. and Mrs. Latimer Voigt, see to it that everything turned out is at least as good as the best of M. Chauvière's own productions. It is the proudest boast of the Integral Propeller Co. that their propellers do not burst in the air, and it would, I think, be hard to find a case of one doing so, except where it has met with active interference from loose stay wires, or from errant pieces of the aeroplane itself.

When one sees the way the work is done at Highgate, one appreciates the reason for this immunity from trouble. The men employed are every one British, though of course originally trained by Frenchmen, and they go about their work with British thoroughness. I also learned that, curiously enough, the art of copper-tipping propellers for seaplanes, which is one of the most difficult and delicate of all the operations of propeller making, was taught by a Belgian workman from the Paris factory. I have not heard of Russians or Servians or Japanese having anything to do with the production of the propellers in this country, but even so, the international entente seems to have had a good deal to say to the excellence of the present products.

One reason, I gather, for the integrality of the propellers is that before the glue is applied to the wood strips which compose the propeller, the wood itself is treated with some special chemical composition which gives the glue a grip as firm as that of Mr. Thomas Atkins on his first German prisoner. The constitution of this chemical is a trade secret of M. Chauvière's, and cannot be extracted either by diplomacy or by much fine gold, for on its maintenance depends very largely the high reputation the propellers have earned. The material used is French, the wood being walnut of very fine quality, which is found to be much tougher than the American variety, and the firm holds in stock quite a large quantity, and happily, thanks to the British Fleet, there seems to be no prospect of interruption of supply.

The metal-tipped propellers for seaplanes are in particularly large demand at present, and while I was there work was in progress on a number of enormous four-bladed propellers of 16 feet diameter, from which one assumes that we are likely to see something rather impressive in the way of airships.

One of the specialities of the Chauvière propeller has always been the accuracy with which special designs have come out when ordered for odd jobs, but air-screws are curious things at best, and occasionally one comes across quite amusing incidents in which the propellers intended for one job have proved highly effective for quite another and different purpose. For instance a tractor was needed in a hurry recently for a very successful scout of a new type with a 50-h.p. Gnome engine. The ordinary 50-horse propeller would of course have had too low a pitch for a high-speed scout, so an Integral originally built for a 70-horse Gnome was tried, with the result that the scout which was expected to do 70 m.p.h., surprised everyone by doing 75. This particular tractor was originally built for the South African Aviation Co. and was used on the Blériot flown by Mr. Driver. It tracted that machine a good many hundred miles in South Africa, and travelled still more miles by train, and was eventually acquired again by the makers. That it should perform so well after such variations of temperature and climate, and still be as good as new, is high testimony to the durability of the firm's products.

While I was at the works Mrs. Voigt showed me a very

interesting letter from a faithful henchman of her family, who recently returned home wounded from France. Some of his remarks concerning the Royal Flying Corps are worth quoting. In one passage he said: "I don't know whether I saw any of your propellers, but I saw a great many aeroplanes and their transport. One lot of their transport wagons was about a mile long, and I was surprised to see so many. Some of them were private motors labelled 'Sunlight Soap' and 'Colman's Mustard.' I have got a bit of canvas from one of our smashed aeroplanes, which I am keeping as a souvenir. Two of our aeroplanes were burned because the pilots were surprised by the enemy and could not get them away. The Flying Corps has done splendid work." It is good to see that private soldiers take such keen interest in the Flying Corps, and it is equally good to see, as one could not help noticing at the Integral Works, that the workmen employed in turning out the matériel for the Flying Corps are equally keen on doing their best.

Wasted Material.

Owing to the strict regulations against the flying of aeroplanes except over recognised aerodromes which are more or less under the control of the Naval or Military authorities, there is, of course, practically no flying going on in the provinces, and very little private flying even in the metropolitan area except for school work. It occurs to one that subject to proper supervision some of the provincial aeroplane makers might be turned to quite good account. For example, Mr. H. G. Melly at Liverpool has been very successful as an instructor. Three of his pupils, Messrs. Birch, Hardman, and Osborne Groves, have each been appointed to a commission in the Royal Flying Corps, and no doubt there would have been many other pupils of the Melly school available but for the fact that the juvenile plutocratic Liverpoolian is not much of a sportsman, being of merchant breed, and but for the contributory fact that several young men who might have learnt to fly at their own expense held back hoping that the scheme for the Liverpool Flying Corps would enable them to learn at the country's expense.

At the present moment, however, there are quite a number of young men all over the country who have applied for commissions in the Army, and who, rather than wait about doing nothing, are willing to learn to fly at their own expense on the off-chance of getting a commission in the Royal Flying Corps, or the Royal Naval Air Service later on, and one ventures to suggest that it would be a good scheme to permit instructional work to be carried on along the coast from Waterloo as usual, as it is a pity to waste Mr. Melly's experience as a constructor and instructor. If the school were further encouraged in that district, no doubt a number of young men in that part of the country who are engaged in business, and so cannot travel south for tuition, would take up flying at their own expense, so as to form the nucleus of a kind of aeronautical reserve.

Exactly the same argument holds good as to the desirability of establishing a flying school somewhere near Edinburgh. Mr. George Wilson, of the "Edinburgh Evening News," and his cousin, another Mr. Wilson, have been doing a good deal of flying, and fly well enough to take their certificates at any moment. They own a Caudron biplane with a 45-h.p. Anzani. Mr. Lawrence Bell, of the Peebles Motor Company, Ltd., has also built a 35-h.p. biplane of Caudron type, which has flown quite well, and these two small machines should be very valuable for a Scottish flying school. In addition, Mr. Bell has built another machine with wings of the Caudron type, and a fuselage body, and this might easily be used for the further education of pupils who have taken their certificates.

The Peebles Motor Company are quite capable of building a number of machines for school work or even machines for actual service use, so that here, again, it is a pity to waste a possible source of supply. It seems that now is the time to encourage those who cannot actually go abroad for service to train themselves and others as aviators, for even if the pupils were not actually appointed for active service they might very well form the beginnings of that Territorial Aviation Service which will have to come into existence sooner or later.

The Public and Brooklands.

Owing to the exigencies of military requirements the general public will not be admitted, until further notice, to the Brooklands Motor Course and Flying Ground. Members of the Brooklands Automobile Racing Club, Brooklands Lawn Tennis Club, and British Motor-Cycle Racing Club, as well as holders of permanent passes, will continue to be admitted subject to the conditions heretofore in force. Applications for tests and speed trials should be addressed to the Secretary of the Brooklands Automobile Racing Club at Carlton House, Regent Street, London, S.W., who will make arrangements if military requirements permit.

A Disclaimer.

With reference to the notes which appeared last week concerning an article in the "Times" Engineering Supplement by a writer signing himself "Ornis," this paper is requested by Mr. Clarence Winchester, of Brighton, to deny that he was the author of the article in question. Mr. Winchester has contributed many articles to South Coast newspapers over the signature of "Ornis," and he states that he has been questioned many times since the appearance of the last issue of THE AEROPLANE as to his responsibility for the mistakes of the other "Ornis." Mr. Winchester is not, perhaps, so highly scientific as "Ornis" of the "Times," but it seems probable that he has had more personal experience of aviation.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Windy	Fog to Fair	Fog to Fair	Fog to Fair	Fair	Windy	Windy
East Coast	Windy	Fine	Windy	Fine	Fine	Windy	Windy
South Coast ...	Fine	Fine	Fine	Windy	Fine	Windy	Fine

Hendon.—At GRAHAME-WHITE SCHOOL: Instructors: Messrs. Manton, Russell, Winter and Shepherd. Pupils with instr.: Flt.-Sub-Lieuts. Hart, England and Giles, and Messrs. Greenwood and Carabajal. Straights alone: Flt.-Sub-Lieuts. Perry, Riggall and Rosher, and Messrs. Morgan, Easter and Carabajal. 8's or cires. alone: Lieut. Polehampton, Flt.-Sub-Lieuts.

Haines, Riggall, Rosher, Allen, Strong and Perry, and Messrs. Mumby and Morgan. Certificates taken by Mr. Mumby, Flt.-Sub-Lieuts. Strong, Rosher, Haines and Lieut. Polehampton. (Five in one week. About a record.) Machines in use: Grahame-White biplanes.

At CAUDRON SCHOOL.—Instructors: Messrs. R. Desoutter, R. M. Murray and E. Prosser. Messrs. Christie, Ivermeec Moon, Barfield, Legh, doing straights. Messrs. Gunner and Stevens rolling. 8's alone: Mr. Abbott. Machines: Three Caudron biplanes (two 35 h.p., one 45 h.p.). Passenger flights on 60-h.p. two-seater Caudron biplane by R. Desoutter.

At HALL FLYING SCHOOL.—Instructors: Messrs. J. L. Hall and A. Cini. Strts. alone: E. Brynildsen (32 strts., 3½ cires.). Machines: Two Hall tractors, one Dep. mono. New brevet biplane ready for tests.

At BEATTY SCHOOL.—Instructors: Messrs. Beatty and Kelly. Pupils: Messrs. MacLachlan, Leong, Smith, Virgilio, Gardner, Aoyang, Parker, Whitehead, Jenkinson, Fletcher, Leeston-Smith, Beard, Beynon, Moore, Newberry, Bond, Monfea, Le Vey and Anstey Chave. On Saturday morning Mr. C. H. C. Smith flew for certificate in very good style, reaching nearly 2,000 ft. in altitude test.

At LONDON AND PROVINCIAL SCHOOL.—Instructors: Messrs. W. T. Warren, M. G. Smiles. Strts alone: Mr. W. White. Rolling: Messrs. Moore, Abel, England, Derwin. Machine: L. and P. biplane.

Eastbourne.—At E.A.C. SCHOOL: Instructors: F. B. Fowler, R. C. Hardstaff. Pupils with instr. on machine: Flt.-Sub-Lieuts. Huskisson, Nicholl, Petre, Iron, Wright and Dawson. 8's alone: Flt.-Sub-Lieut. Petre. Machines: E.A.C. biplanes. Week's work very satisfactory. Flt.-Sub-Lieut. Petre showing great promise.

Shoreham.—At PASHLEY BROS. AND HALE: Pupils with instr.: Messrs. J. Morrison, T. Cole, and J. Sibley, Cires. and 8's: Messrs. J. Woodhouse and C. Winchester. Mr. J. Woodhouse, the well-known motor cyclist, who was to have passed his certificate tests this week, left for Antwerp with the British and Colonial Horse.

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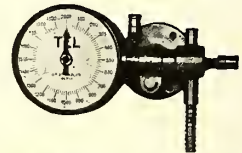
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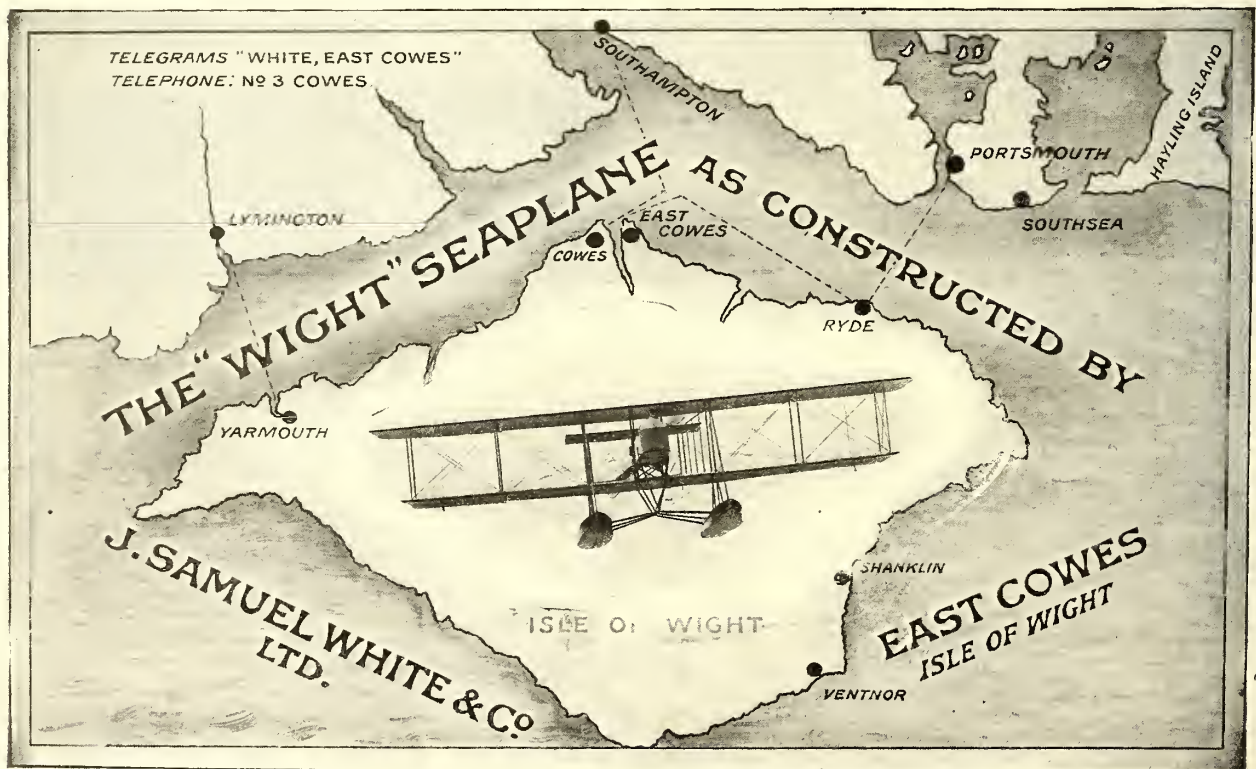
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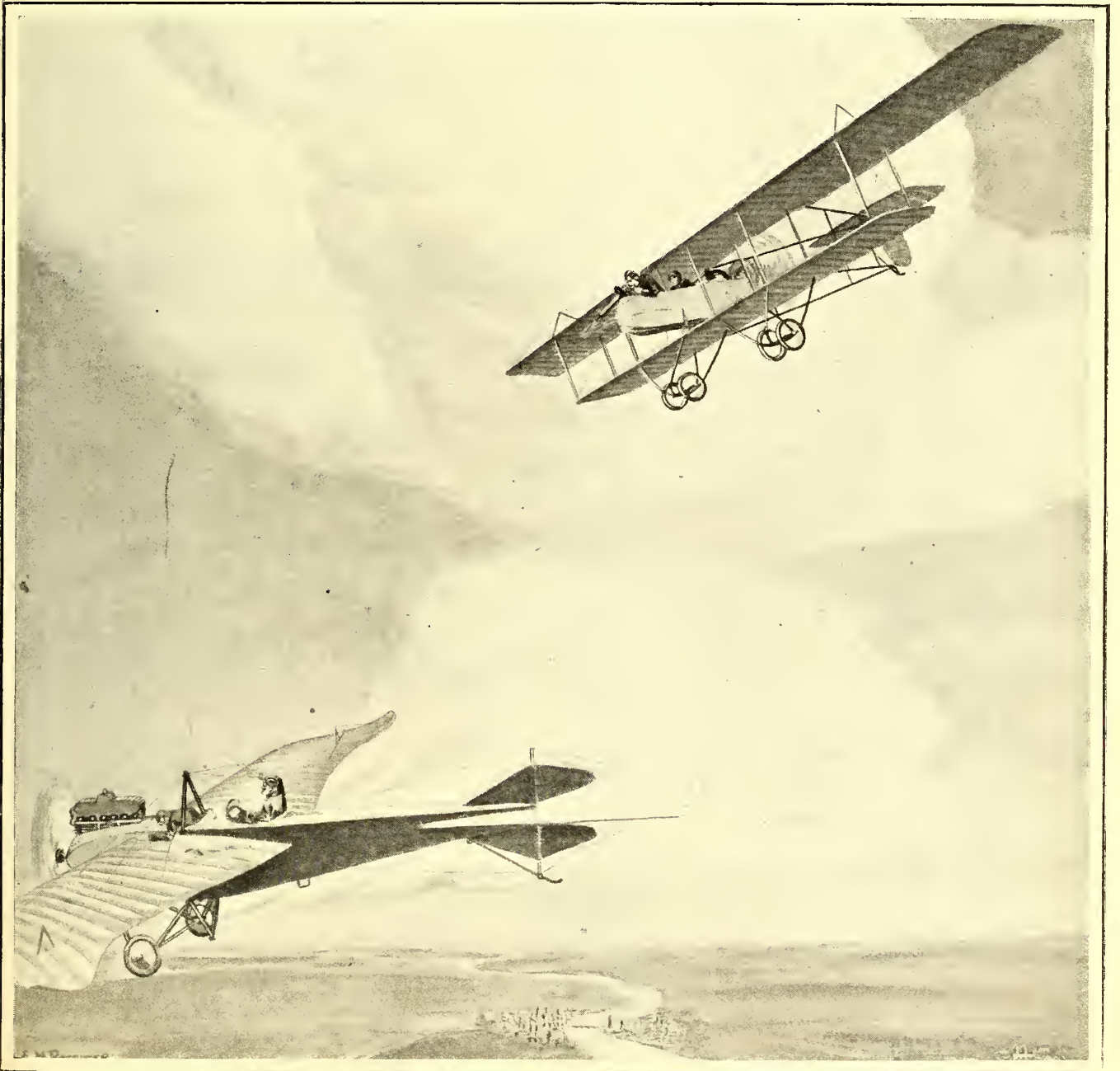
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.
AS A NEWSPAPER.]

WEDNESDAY, OCTOBER 14, 1914.

No. 16

"LA CHASSE AUX BOCHES."



Drawn by E. M. Rossiter.

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On Things in General.

THE WRIGHT PATENTS AND THE AEROPLANE INDUSTRY.

But for the fact that everyone's attention is concentrated on the War, the announcement which appears hereunder would cause the biggest sensation that the aeroplane industry has enjoyed for quite a long time.

For more than a year past, as many readers are no doubt aware, the British Wright Company, Limited, who own the original Wright Patent, have been suing the War Office in respect to infringement by the Forces of the Crown. One is now able to make it known that in order to relieve the War Department from unnecessary embarrassment during the stress of war, the British Wright Company made an offer to accept £15,000 in settlement of the original claim of £25,000 for the use of the patent. This offer has now been accepted, and both sides are to be congratulated on the good sense of this arrangement.

Obviously, after such an agreement has been reached, it is impossible for anyone who is not a millionaire to fight the Wright Patents in Court, and, doubtless, many people will jump to the conclusion that the industry is in for a very uncomfortable time in the future, owing to the royalties which will be claimed by the owners of the Patent. However, I am informed by Mr. Griffith Brewer, the well-known patent agent who operates for the British Wright Company, that the arrangement made with the Government covers all claims against all machines which are being built, or ever will be built, for either the Admiralty or the War Office. This includes not only those built to Government design, but all others ordered from firms who are building to their own designs, so that all Government contractors are exempt from any claim.

It seems probable that this arrangement will also cover any experimental machines intended for Government use, if not actually built under contract, provided they are eventually bought by the Government.

There remain then such machines as may be built after the war for private use or for sale to foreign Governments. Fortunately, those who are associated with Mr. Brewer in the British Wright Company, are men who are earnestly desirous of forwarding the progress of British aviation, and have already done more than most people in this direction, so one may rest assured that they will not exact any unreasonable sum in royalties.

One merely ventures to suggest to them that in fixing their royalties they would be wise to do so on a basis representing a percentage of the catalogued selling price of the machines, for a flat-rate royalty of so much per machine which would be a negligible quantity on a 2,000-h.p. £20,000 seaplane for a foreign Navy would be ruination to a firm turning out a 40-h.p. £400 sporting aeroplane of the sort which will undoubtedly find a ready market when the country settles down after the war.

HOME COMFORTS.

The following notice has been communicated for publication:—

Lady Henderson, wife of the General Officer Commanding the Royal Flying Corps, Expeditionary Force, is arranging to forward gifts and comforts for the cold weather to the men of the Royal Flying Corps in the field. Warm caps, gloves, knitted jackets, wristlets, socks, pipes, tobacco, and cigarettes are most required. Any gifts of this kind will be forwarded if

sent addressed to Lady Henderson, 8, Chesterfield Gardens, W. Parcels should be marked "Royal Flying Corps Aid."

The Committee will also be grateful for cheques to be spent on such comforts.

All letters should be addressed to Mrs. William L. Selater, hon. secretary, Royal Flying Corps Aid Committee, 10, Sleane Court, S.W. The treasurer of the Fund is the Hon. Mrs. Edward Stonor, 27, Montagu Square, W.

As stated at some length last week, a fund for the same purpose had already been started at Farnborough by Mrs. Corden and Mrs. Barrington-Kennett. One is glad to be able to record that the two funds have joined forces and that the Farnborough ladies are joining the new committee. In such a case union is strength, and the presence of Lady Henderson at the head of affairs will add materially to the success of the fund.

Perhaps I may again remind my readers that small contributions as well as large are heartily welcome. There are at present many thousands of men engaged in well-paid work in aeroplane factories who would have been out of work owing to the war but for the existence of the Royal Flying Corps and the fine work it is doing. If each of these men, all of whom read THE AEROPLANE, were to contribute a single shilling, it would increase the fund by several hundreds of pounds. I therefore venture to suggest that in each workshop where aeroplanes are being built for the Army a committee of the leading hands should start a whip round of a shilling a head and send the result to Mrs. Stonor, or Mrs. Barrington-Kennett, as a gift from the workshop hands of that firm. This should be done without the assistance of the office staff and purely as a thank-offering from the firm's workers to the Corps which has saved the Army.

If the office staff of each firm likes to send a separate offering on its own account, so much the better. In any case this paper will be pleased to put on record in print what any individual shop has contributed, if the contributors so desire. Where men are earning such good wages as those in the aeroplane industry are receiving, a shilling a head is nothing. They could easily afford a shilling a week. Four packets of cigarettes per man is not much to ask. Let us see what the aeroplane industry can do for its own particular Corps, for, be it remembered, this is the only case where a distinct industry is concerned entirely with work for one particular Corps of the Army.

As regards other readers of the paper, I beg that they will send along their contributions in cash or kind **at once**. It is horribly cold these mornings, even in a civilised bed-room. What must it be in the open with only the wing of an aeroplane for a tent?

FOR THE R.N.A.S.

While we are working to provide the Royal Flying Corps in the field with warm things and home comforts, we must not forget that there are many N.C.Os. and men of the Royal Naval Air Service abroad, both on the Continent with land machines and at sea with seaplanes, who feel the cold quite as much as the R.F.C. Despite the proverbial "handiness" of the bluejacket, and the fact that Mr. Kipling has sung of "His Majesty's Jolly" that "there isn't a job on the top of the earth that the beggar don't know and do," neither the sailor nor marine has discovered how to keep warm in the winter without warm clothes. Therefore the following appeal is very opportune:—

Mrs. Sueter will be glad to receive and dispatch to the men of the Naval Air Service serving abroad the following articles: Comforters, long stockings (dark blue preferred), cardigans, grey flannel shirts, woollen drawers, mittens. Kindly send parcels to Mrs. Sueter, "The Howe," Watlington, Oxon.

Mrs. Sueter is the wife of Captain Murray Sueter, R.N., C.B., Director of the Air Department of the Admiralty. Few people quite realise the great work Captain Sueter has done for the Empire in evolving the present well ordered state of the R.N.A.S. out of the chaos which existed when he took over. Thanks to him, under Providence and Mr. Churchill, we have the finest Naval Air Service in the World. Our seaplanes are unapproached elsewhere, and our shoregoing Naval aeroplanes can knock spots off any other country's military air service. Some of the best aeroplanes in the world owe their existence to the wise policy of Captain Sueter in encouraging independent British constructors to develop their new ideas, when otherwise they would have been wiped out, or have been reduced to reproducing Government designs. Here is a chance for all who respect his work to show their appreciation of it.

The Lighting of London.

London is steadily becoming darker and darker, and no one seems very much the worse for it, except, perhaps, the Gas Light and Coke Co., and the various proprietary electric light firms. Where the electric light belongs to municipal authorities they will save money, and, anyhow, the street lighting bills of the various borough councils will be less. Motorists will probably be a trifle more careful in driving, and, probably, pedestrians will learn to be more sensible in crossing streets, and will behave less like frightened hens, for, curiously enough, the more light there is the more uncertain people seem to be about where they really want to go to in crossing a road, probably because they see too many possible havens of refuge at once, and cannot make up their minds which is the most attractive. As a result, we shall probably have less street accidents in future, just as we have actually had fewer accidents on the open road since the speed limit and police-traps vanished with the outbreak of war and the advent of O.H.M.S. cars in a hurry. It used to be said that the population consisted of the "quick," who dodged motor-cars, and the "dead," who did not. Apparently, the rural population is becoming quicker, thanks to military motors.

The writer of a "leader" in the "Times" on October 10th makes a good point, which is worth noting. He says:—

"The map of London, at night, would be made clear to a hostile airship by the lighting of the roadways, and such lighting may, therefore, be a public danger, whether the lights are moving or stationary. It may be caused by the strong lights of motor-cars as well as by those of shop windows. Indeed, the lights of a swift motor-car will show more clearly than any others the direction of a street; and, where these are numerous, an important artery or centre of traffic is revealed. It is, therefore, at least as necessary that motor-cars should not carry blazing lights as that such lights should be absent from shop windows; and in London it cannot be pretended that these blazing lights are at all needed for the safety of traffic."

One can agree absolutely with these remarks, and would add that it has long been a police regulation in Paris that all head-lights must be extinguished on "penetrating the fortifications," and the streets of Paris are very badly lighted compared with ours.

There is, however, a danger that the darkening of London may be overdone and defeat its own object. I have been told by officers who have flown on pitch dark nights, when there was no moon at all, that if the air is clear one can see everything on the ground by the diffused light of the stars, though on the ground itself one can see nothing. They say that roads, hedges, grass-land and plough, villages and farms stand out quite clearly till one is almost on ground level and has the starlight in front of one instead of above. In moonlight things are clearer still, unless one faces a low moon.

This was brought home to me the other night when driving back from Hendon, for on the top of Finchley Road, whence a big expanse of West London can be seen, it was quite easy to

Elsewhere I have suggested that works engaged in turning out Army aeroplanes should have a whip round for the R.F.C. Similarly I would suggest that those working for the Admiralty should set to work and send along a handsome donation to Mrs. Sueter for the R.N.A.S., and I would also ask all the other readers of this paper to send a portion of their gifts to the R.N.A.S.

The successful operations of armed motor-cars under Wing-Commander Samson against German cavalry raiders, the first raid on Düsseldorf and Cologne by the Naval aviators under Squadron-Commander Gerrard, and the second raid under Squadron-Commander Grey show the kind of work the R.N.A.S. pilots have to do. If they are to do it safely and well, their machines must be in perfect trim, and if the mechanics who keep those machines in order are to do their work efficiently they must be kept healthy and warm and comfortable. I hope to hear before long that the supply of blue "woollies" for the R.N.A.S. is coming in as heartily as that of khaki for the R.F.C. In both cases, speed is the first consideration. Get the things sent in before the really cold weather comes.—C. G. G.

pick out the different localities, whereas if there had been a few brilliant lights about they would have blotted out the districts behind them. Anyone who has ever been along a country road at night knows how well one can see the whole landscape till a bicycle-lamp comes towards one and blots out the view.

Of course, the various search-lights sprinkled about London would momentarily blind the crew of an airship if the beams once found her. But, as a writer in the "Globe" pointed out last week, these search-lights always operate from fixed places, and would act as landmarks to well-informed airship pilots, and by simply shading his eyes from the glare the look-out man would still be able to see what was directly below him. I am told by gunnery experts that it is quite impossible to hit a search-light emplacement, even when one is not directly in the beam, but that is possibly due to some peculiarity of horizontal perspective. It seems possible, however, that an airship, by manoeuvring so that the beam threw vertically up at her, might drop a bomb with better prospects of success.

Apart from that, however, the darkening of London simplifies signalling by any German spies still left at large. Incidentally, it has been suggested to me that a large number of German spies are coming into this country among the Belgian refugees. As many of the poorer Belgians habitually speak Flemish, their French is very bad, and it is the easier for a German to pass himself off as a Flammand, for there are few people in this country able to detect him. The possibility is worth watching.

However, the point it is desirable to consider was first mentioned to me by a wily old soldier connected with this office. He fought right through the South African War, and Boer tactics have evidently taught him something. He suggests that any German waiter or anyone else in the enemy's pay, who has learnt the Morse code, could sit comfortably on the top of any of London's taller buildings and flash signals to an airship without being observed. Take, for example, a hotel in the Strand, from there it could be signalled that the point from which the light was shown was so many hundred yards due East from the Admiralty, or other important building. With London in its present state of darkness quite a small light enclosed in a deep box with a shutter on the top could be seen easily from a great height.

It is, of course, useless to try and disguise the whereabouts of London, as a whole, for, as I have shown, complete darkness makes it more easily visible; therefore, all we can expect to do is to throw a hostile airship off the exact position of certain important buildings. Consequently, it seems that our best game would be to arrange false lights—as I suggested some weeks ago—or, what I now think would be better still, a whole system of dazzling lights.

A Possible Lighting System.

Presumably, it is possible to produce a species of search-light which, instead of throwing a concentrated beam, would

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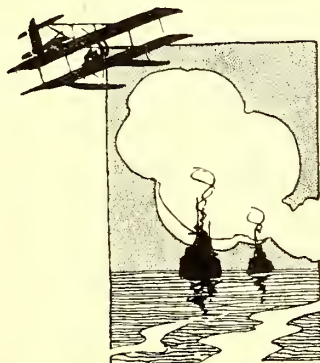
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throw a widely diffused beam covering an area of, say, half a mile diameter at anything at about 3,000 feet. Such a light fixed to throw directly upwards would blot out everything below it inside a circle of half a mile in diameter, including any ordinary lights of street lamps and shops—except the very brilliant ones. Now, suppose one took a map of London and ruled it off in, say, half-mile squares from, say, Barking to Hammersmith, and from Hampstead to Blackheath, and fixed one of these lights at the corner of each square, irrespective of whether the point fell in the middle of a road or in the river, or on top of a private house, or anywhere else. It seems likely that everything inside those limits would be quite invisible to anyone above, and at 4,000 to 6,000 feet the circles would overlap to such an extent that everything below would look like a white sheet. By shifting the squares every few days all possibility of spies communicating the key to the squares could be avoided, and the size of the squares could also be altered. The lights could be carried on tower-wagons, like those used for repairing tramway wires, and electric power could be supplied by the local authorities. When a light had to be fixed on the river it could be floated on a barge. Incidentally, I think it would be found, if the scheme were worked out on a large scale with very powerful lights, that the diffusion of light downwards from the clouds or from the usual London haze would be so great that the streets would be better lighted than by the present glaring street lamps, the unsightly and cumbersome standards of which could then be dug up. One would have a gentle but clear light, such as is diffused from the up-turned lamps, with shades below, which one finds in many modern houses and hotels. One finds a similar effect in a fog, for one can always see better when looking behind a car with big headlights in a fog than one can when looking into the white wall made by the lights on the fog.

The scheme is not so utterly crack-brained as it may appear at first, and I venture to suggest that it might be worth while for the authorities to try the effect over a patch of London, say, two miles square. This would involve four lamps a side, each half a mile apart, and sixteen lamps in all, so that if worked on motor-cars the expense would not be very great, especially if the operators did not adhere rigidly to the placing of the lamps on the exact spot indicated, and were content with putting the lamps on a bridge instead of on a river barge, and so forth. As a matter of fact, it might be found that a purely arbitrary placing of the lights was more confusing to aerial navigators than a regular geometric scheme.

Naturally, any hostile airship which happened along would drop bombs haphazard on the lighted area just for luck, but if Jim Smith, incorrigible rogue, of Tottenham Court Road, and Mr. Bullion-Boundermerc, of Park Lane, had to take the same chances as Lord Kitchener, or Mr. Churchill, of Whitehall, the burden of Empire would be more fairly divided.

The Promised Zeppelin Raid.

In connection with this subject two consecutive notes in the "Observer" of Sunday last are of particular interest. The first runs as follows:—

The threatened German Zeppelin raid on London was referred to by Mr. Walter Runciman at Kingsway Hall last night.

He understood that at the end of October the German aircraft were going to honour England with their attention. Anyone who had come through London that night saw that they contemplated a visit from German aircraft. They could only drop their bombs on an unfortified city, and innocent people would be killed and wounded if the Zeppelins did come. But if the Germans thought they could frighten the people by such raids they had once more miscalculated the British character, for nothing would more stimulate recruiting than a Zeppelin raid on London.

The second reads thus:—

PARIS, Saturday.

The Copenhagen correspondent of the "Temps" states that according to private information from Berlin Germany is building a powerful fleet of new Zeppelins, with motors the sound of which can scarcely be heard, even when the machine is near the ground. They will be used for raids over England and for shelling the Fleet.

To take the last first—the powerful new Zeppelins fitted with silenced engines were duly described in this paper a month or so before the outbreak of war, the first of the type having just made her trial trip over Lake Constance. They are better than the old type, but still no match for an aeroplane in daylight, and, as so often pointed out, they cannot be built in a hurry.

It is well to remember a remark made by one of our cleverest airship officers, and quoted in this paper a year or so ago, to the effect that the airship is now in about the same stage of development as the aeroplane was when the Voisins produced their box-kite, or, say, at best, when Henri Farman brought out his improvement on the Voisin, the reason being that one can smash an aeroplane and build an improvement upon it in a month or six weeks, whereas it takes a year or so to produce a new airship, at any rate, in time of peace when one is not rushing the constructors. The Zeppelin Co. has works at Potsdam, as well as at Friedrichshafen, but it seems very unlikely that the time of construction of any one ship can be reduced to less than four or five months, and it is not probable that other engineering firms can take on this work elsewhere with prospects of immediate success.

Last Sunday, the editor of the "Sunday Chronicle," which has probably the largest all-round circulation of any Sunday paper, was good enough to allow me to reply in his columns to a somewhat alarmist article by Mr. W. Peer Groves on the promised attack by the new super-Zeppelins, and in his rejoinder to my reply, published at the same time, Mr. Groves points out that I am, as editor of THE AEROPLANE, open to a charge of very natural bias in favour of the heavier-than-air machine. Perhaps, therefore, I may explain, as I explained a long while ago, that my anxiety to have a big and efficient aeroplane fleet first of all was because we could, with the small amount of money available for Naval and Military Aeronautics during the past few years, produce a whole fleet of aeroplanes for the price of the experiments on two or three big airships. The argument I then used was that if a country without a fleet on the sea, and with only a certain amount of money to spend, suddenly desired to have one, it would be wiser to build a fleet of very fast torpedo boats and destroyers than to spend all the money on one or two purely experimental Dreadnoughts. The analogy is exact.

I have no prejudice against airships, as such, and, let it be remembered, that it was I, personally—please forgive this egotism—who, "acting on information received," as the police say, started round the Press the story which the official and semi-official organs of the present Government were pleased to call the "great airship scare," which resulted in Mr. Churchill stating officially in the House of Commons that a foreign airship had passed over this country. The airship was there all right, but I have long had a horrid suspicion that she came by invitation, with the intention of stirring things up a bit. If so, the plant succeeded admirably.

No one worked the alarmist stop more vehemently than I did then, and, thanks to the backing of one or two able journalists like Mr. C. C. Turner, I honestly believe that "scare" hastened the development of aviation in this country, a fact for which doubtless the British and French Armies are now duly thankful, for if progress had not been hustled the R.F.C. might now have consisted of a few intellectual officers of the Royal Engineers assisting the Royal Aircraft Factory to experiment with F.E.s and "canards," and "Deltas" and "Etas."

As it is, we have got our "destroyers," the finest in the world, but we have had to sacrifice our desire for "battle-ships." That is the fault of the Treasury and not of any "heavier-than-air" conspiracy. One jeered at Colonel Seely's absurd claim that the little Army airships were so wonderfully valuable, and at his making a State secret of the Willows swivelling propeller device; but one never deprecate the spending of money on experimental airships. On the contrary, on various occasions this paper has strongly advocated the production of airships on a really considerable scale.

It always seems to me that the Royal Aircraft Factory officials missed a wonderful opportunity in this direction. If they had used all their personal influence and political "pull" to get permission to experiment with very large airships, it

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earnest co-operation with certain naval and military airship officers who have displayed ability and the only civilian with airship experience, Mr. Willows, they would by now have produced something worth having, provided always the man at the head of that particular job had been tactful, and did not set everyone's back up.

The Royal Aircraft Factory, with its huge equipment of workshops and machinery, is better equipped than any other concern for the building of airships, and even now it might do good work in this direction. Mr. O'Gorman is, I know, a great believer in the future of airships, and has all the theory of their design, if not the practice thereof, at his disposal, and I for one would very much like to see sufficient money placed at his command to allow him to carry out some of the ideas in his possession or within his reach.

Of course, this is no time for experiments, but we have in Naval Airships III and IV, the Astra-Torres and the Parseval, two of the best non-rigids in the world, and we ought to be able to copy their general construction and improve on innumerable details to good effect. We cannot, I think, produce airships as quickly as the Germans can, for we have no firm like the Augsburg rubber people who are used to making balloon envelopes in large quantities and sizes, nor are we so used to making the cars (or nacelles) in such numbers as are the Parseval or Gross (military) shops—when one remembers the weird happenings to the car of the old "Delta" one has qualms about this point. Still, if we had started about the job even at the outbreak of war we might have had a good many useful airships nearly ready by now which, though not able to travel such long distances, were at least as fast as Zeppelins, and were able to rise to higher altitudes. They would be a very useful defence against Zeppelins or other invading airships, when it was too foggy for aeroplanes.

October.

Here one may turn to Mr. Runciman's speech and his reference to the promised attack in October. Probably by now the people of this country in general are beginning to respect German brains and organising ability as much as do the officers of both the Navy and Army. German time-tables may go wrong, thanks to the fighting quality of their opponents, but it is foolish to scoff at their organisation, which is wonderful.

Probably they fixed on October and November for their promised attacks on London for the reason that fogs and darkness would give the airships an advantage over aeroplanes at night. If so, their plan is a good one. In calculating on fogs they evidently reckon on calm air, and we know the long journeys the naval airships did every day during those calm days of August, when they patrolled the Channel from Dover to Ostend to protect our troop-ships. Fogs also would make the work of our aeroplanes more difficult.

Still, the success of the R.N.A.S. raid on Düsseldorf leads one to think that similar raids during daylight, when airships are always afraid to venture out, on any temporary sheds which the Germans may set up at Brussels and Antwerp, may prevent the airships from starting. If they arrive here in clear weather, such as would permit them to pick out the particular parts of London which they wish to bombard, our aeroplanes will be able to operate against them with fair prospects of success, and our high-angle guns will be able to sight them. If, on the other hand, they choose to come over in fog, they will be unable to see their targets; and, though we shall probably be unable to retaliate effectively, we, civilians whose existence does not very much matter, shall all have an equal chance of being hit, and the risk to the more important people at the Admiralty and War Office who are working to save the country will be reduced, which is more or less as it should be.

Also, one cannot assume that the East End will get all the benefit of the bombs, for if there should be a west wind it is probable that the airships will pass wide of London to north or south and will drift down the valley of the Thames with the wind, stopping their engines so as not to be heard till the bombs begin going. Thus, one may expect peaceful Ealing or Richmond or Hammersmith all to get their share as a

lane of destruction is worked steadily along towards the administrative centre of the Empire. However, wind destroyed the Spanish Armada, and an opportune gale may blow the airships off their course after the raid has started. All the same, the various Christian nations of the world are trying the Almighty rather high at present, so it seems hardly worth while to complicate matters by praying for that gale to happen at the right moment.

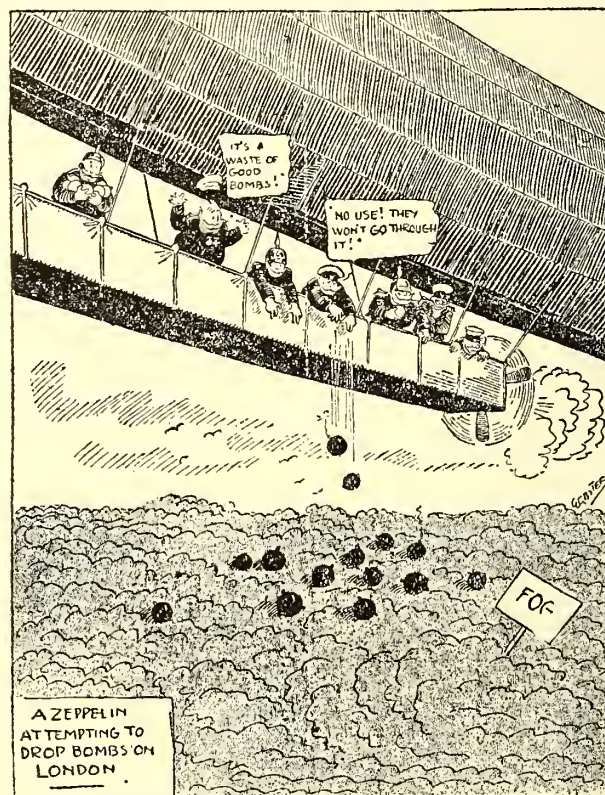
Incidentally, as Mr. Runciman pointed out, a haphazard bombardment of London will give the populace a taste of what war means, and the exasperation so caused will be a valuable aid to recruiting. It is as nearly a certainty as anything in war can be that such a raid will be made, and it is likely that if any considerable number of airships are used they will be of the Parseval and Gross type, rather than Zeppelins, for these vessels can be transported by road to Brussels and Antwerp and inflated there, and so avoid the risks which Zeppelins would have to take of being destroyed on their way across Belgium by our aeroplanes.

Such a raid is all part of the business of war, and if it comes off the people who will be to blame are the Secretary of State for War and the Master-General of the Ordnance of three or four years ago, who were so short-sighted and who so systematically discouraged all kinds of aeronautical development. By saving two or three hundreds of thousands of pounds then they have already cost this country as many millions. Anyhow, they cannot plead that they were not warned in time. The people who are not liable to blame are those who fought and agitated for an adequate fleet of aeroplanes before all else.—C. G. G.

Bomb Insurance.

At Lloyd's on October 7th policies were being issued by underwriters to insure private houses in London and the suburbs against bombardment, including bomb-throwing from German aircraft. The rate is 3s. 6d. to 5s. per cent.

AN AMERICAN VIEW OF THE QUESTION.



How the artist of "In Lighter Vein" (New York) foresees the protection of London by its own fogs.

Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," October 6th, 1914.

Admiralty, October 1st.

ROYAL NAVAL VOLUNTEER RESERVE.—A temporary commission in the Royal Naval Volunteer Reserve has been issued as follows:—Sub-Lieut. William Edward de Bagulegh Whittaker.

War Office, October 6th. Regular Forces. Establishments.

ROYAL FLYING CORPS.—Military Wing.—Captain (temporary Major) Herbert Musgrave, Royal Engineers, from a deputy assistant director at the War Office, to be a squadron commander. Dated September 15th, 1914.

The undermentioned flying officers are advanced to flight commanders, and to be temporary captains. Dated August 7th, 1914: Lieut. Walter Lawrence, 7th Battalion the Essex Regiment, and Lieut. Philip B. Joubert de la Ferté, Royal Artillery.

ROYAL REGIMENT OF ARTILLERY.—Royal Field Artillery.—Loitus Anthony Bryan, late captain the Waterford Royal Garrison Artillery (Militia), to be temporary major. Dated September 30th, 1914.

A Second Supplement to the "Gazette" of October 6th contains the following military appointments:—

War Office, October 7th. Regular Forces. Establishments.

ROYAL FLYING CORPS.—Military Wing.—Captain Lionel E. O. Charlton, D.S.O., the Lancashire Fusiliers, a flight commander, to be advanced to squadron commander, and to be temporary major. Dated September 16th, 1914.

A Fourth Supplement to the "Gazette" of October 6th, published on October 8th, contains the following military appointments:—

War Office, October 8th. Regular Forces. Commands and Staff. The undermentioned appointments are made:—

PERSONAL STAFF.—Brigade Major: Major B. D. Fisher, 17th (Duke of Cambridge's Own) Lancers. Dated September 20th, 1914.

SPECIAL APPOINTMENT.—Graded for purposes of pay as General Staff Officer, Third Grade: Lieut.-Colonel C. F. Massy, retired pay. Dated September 8th, 1914.

SECOND LIEUTENANCY.—The undermentioned non-commissioned officer to be second lieutenant under the Regulations issued with Army Order of May 7th, 1914. Dated September 15th, 1914:—The Connaught Rangers—Sergeant William Walter Walker Reilly, from Royal Flying Corps (Military Wing).

CAVALRY.—Reserve Regiments.—The appointment to a temporary second lieutenancy of William Henry Charlesworth, from the Royal Flying Corps, Military Wing, Special Reserve of Officers, which was notified in the "Gazette" of October 5th, 1914, is cancelled.

From the "London Gazette," October 9th, 1914.

Admiralty, October 5th.

ROYAL NAVAL AIR SERVICE.—Assistant-Paymaster John Henry Lidderdale to be flight lieutenant. Dated July 1st, 1914.

War Office, October 9th. Regular Forces. Establishments.

ROYAL FLYING CORPS.—Military Wing.—Lieut. C. W. Wilson, Special Reserve, from a flying officer, to be a flight commander, and to be temporary captain. Dated September 16th, 1914.

A Supplement to the "Gazette" of October 9th, published on Saturday, contains the following military appointments:—

War Office, October 10th. Regular Forces.

SPECIAL RESERVE OF OFFICERS.—Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—The undermentioned to be second lieutenants (on probation): James Gordon McKinley; dated October 5th, 1914. Dated October 10th, 1914: Gerald Charles Ross Mumby and Oswald Mansell-Moullin.

A Second Supplement to the "Gazette" of October 9th, published on October 12th, contains the following military appointment:—

War Office, October 12th. Regular Forces. Establishments.

ROYAL FLYING CORPS.—Military Wing.—Lieut. Ronald L. Charteris, Special Reserve, to be a flying officer. Dated August 6th, 1914.

NAVAL.

The following appointments were announced at the Admiralty on October 12th:—

ROYAL NAVAL AIR SERVICE.—Messrs. K. F. Watson and D. M. Barnes have been entered as probationary flight sub-lieutenants and appointed to the "Pembroke III." for instruction at the Hendon Aerodrome, to date October 12th.

Mr. E. H. Dunning has been entered as probationary flight sub-lieutenant and appointed to the "Pembroke III.," for course of instruction at Eastchurch Naval Air Station, to date October 4th.

The following have been entered as probationary flight sub-lieutenants and appointed to the "Pembroke III." for course of instruction at Hendon Air Station: T. K. Young, E. F. Bray, E. J. Hodsoll, and E. B. Morgan, all to date October 7th.

* * *

The Secretary of the Admiralty, through the Official Press Bureau, makes the following announcement:—

Squadron Commander D. A. Spenser Grey, R.N., reports that as authorised he carried out, with Lieutenant R. L. G. Marix and Lieutenant S. V. Sippe, a successful attack on the Düsseldorf airship shed.

Lieutenant Marix's bombs, dropped from 500 feet, hit the shed, went through the roof, and destroyed a Zeppelin. Flames were observed 500 feet high, the result of igniting the gas of an airship.

All three officers are safe, but their aeroplanes have been lost.

The feat would appear to be in every respect remarkable, having regard to the distance—over a hundred miles—penetrated into country held by the enemy, and to the fact that a previous attack had put the enemy on their guard and enabled them to mount anti-aircraft guns.

[Without in the least detracting from the value of the fine performance of these officers one would point out that the first raid under Major Gerrard, in which Squadron-Commander Grey also took part, was much more remarkable, as it showed that the feat was possible. It is merely under-rating German intelligence to assume that high-angle guns were not already mounted on that occasion.—Ed.]

* * *

It was reported from Amsterdam on October 9th that the communiqué issued by the German Great Headquarters the previous evening contained the following:—

"The airship shed at Düsseldorf has been hit by a bomb thrown by a hostile aviator. The roof of the shed was pierced and the cover of an airship in the shed was demolished."

In addition the Amsterdam correspondent of the "Daily Chronicle" reported on the same date:—

"The Germans admit the damage done by the aeroplane which visited the Rhine district around Düsseldorf and Cologne this week—the second daring visit to this centre of German air bases. A Cologne message says a hostile aeroplane was seen over the airship sheds at Bickendorf on Thursday. On being fired at, it disappeared in the direction of the gasworks at Ehrenfeld, where a bomb was dropped. Then it flew over the southern bridge to Fort Deckstein, and afterwards went west. At Düsseldorf an aeroplane, presumably the same, damaged a Zeppelin airship shed and an airship."

The "Chronicle" is to be congratulated on this message, which it alone was able to give on Saturday, for no mention is made in the official despatch of the Cologne incident.

The "Times" correspondent at Copenhagen reported on October 11th as follows:—

The latest British air raid into Germany appears to have caused some surprise in Germany. Speaking of the attempt on the Bickendorf Gasworks under machine gun fire the "Cologne Gazette" says:—"We should like to recognise this piece of bravery of the English or French flier, for it really is a daring act which one must respect. As it was the middle of the afternoon many promenaders saw the machine, although hardly anyone imagined it was the enemy's."

The "Rheinische Westfälische Zeitung" describes the successful attack on the airship shed at Düsseldorf. The flier

was exposed to heavy shrapnel and rifle fire. Near the new shed he suddenly dived so that the spectators thought he was hit. But he obviously dived to avoid the shrapnel and make more certain of his aim. With one shot he hit the shed about the middle of the roof. A gigantic burst of flame followed and there was great smoke for about 10 minutes. Externally nothing was to be seen but a large hole. It is supposed that the flier must have learned through treachery that this Zeppelin had only been transferred three days previously from the old shed. If, as is reported, the airship was not filled, the hope is expressed that it is not too seriously damaged.

[This accounts for the German official statement that only the covering was destroyed. The other shed was doubtless the one damaged by Lieut. Collet.—Ed.]

* * *

From various sources this paper is able to give the following narrative of the raid, and though there may be errors in details the main facts may be taken as accurate.

The three pilots told off for the raid, together with a machine crew of marines, went to Antwerp in the early stages of the German investment, Squadron-Commander Grey and Lieut. Marix on Sopwith "scouts," and Lieut. Sippe on a B.E. They stayed there the first night in a palatial mansion belonging to a German merchant prince, but vacated by its owner, so that although shells were passing over their heads all night the house was carefully missed by the guns. Next morning early they started on the raid. Lieut. Sippe's engine gave trouble at the start, and let him down so badly that he was unable to complete the journey and had to await the return of the other two in the evening. The other pilots made their journey in rather thick weather, not seeing the ground at all for considerable distances. Once Lieut. Marix came down to find out where he was, and found himself only a hundred feet or so above the tree-tops.

On arriving at Düsseldorf Lieut. Marix deliberately dived to 500 feet and released his bombs in the midst of heavy fire from rifles and high-angle guns. The result fulfilled his best hopes, for certain of the bombs set light to the shed and the machine inside it, which was, presumably, a Zeppelin.

Seeing that all was well, Squadron-Commander Grey went on up the Rhine to Cologne. There he was unable to find the airship shed, owing to the weather being misty on that side, so, after circling over the city, he let the bombs go over the central railway station, which appeared to be considerably damaged. He then returned to Antwerp, whither Lieut. Marix had preceded him, and both arrived safely, Squadron-Commander Grey at the aerodrome, and Lieut. Marix late at night, having been brought down by lack of petrol 10 miles out, where he was picked up by a Belgian armed motor-car.

His machine had to be destroyed to keep it out of the hands of the Germans, and the two others were smashed by German artillery next day, but it was a cheap price to pay for the material and intellectual damage done.

While the two luckier pilots were away the German artillery had moved closer to the aviation ground and was busy smashing up other machines there, so that landing was unpleasant. At first sign of dawn everybody cleared out to the wood on the opposite side of the ground. Unfortunately, they apparently forgot to set light to the house before they left. Thence they got away to Antwerp, only to find that the order for its evacuation had been given on the previous afternoon. The oil tanks were then well alight and the canal was simply a blazing river over which their car had to pass with the flames lapping over the parapets of the bridge, so that they had to shield their faces with their hands, and even then were severely scorched. Afterwards they had to crawl along roads crammed with refugees, the Germans shelling the road all the while. Incidentally, it is no jest driving along a road which has been under gun-fire, for the big shells leave huge holes into which a car may drop bodily, and small ones make enough mess of the road to turn a car over. After many minor adventures the three raiders and their men returned to Ostend, whence, in due course, they reached England in search of new machines.

They are to be sincerely congratulated on their plucky effort and still more on their success. One hopes this and Lieut. Collet's performances are only the fore-runners of still greater and more extensive raids, for nothing will shake the nerve of the normally peaceful non-pugnacious German citizen, who has unwillingly to pay for the war, and is at present suffering from war fever, so much as having the war carried on over his own head.

Squadron-Commander Spenser Grey, formerly commanding Calshot Air Station, is, of course, well known to readers of this paper as one of the most capable fliers in the Navy. He has acted as instructor to Mr. Winston Churchill on many occasions. He is the son of the late Douglas Grey, of the Irish Civil Service, and belongs to a somewhat noteworthy family, the Greys of Northumberland, who, though very few in number, have given to this country's service in the last century, a famous Prime Minister, a former Governor-General of South Africa and New Zealand, the recent Viceroy of Canada, the present Secretary of State for Foreign Affairs, and an officer of the Royal Flying Corps who has recently won the Cross of the French Legion of Honour, besides sundry admirals and general officers, and others in more humble stations of life.

Flight-Lieut. Marix was formerly in the Royal Naval Volunteer Reserve, and was appointed to the Royal Naval Air Service in its early days. He soon established a Service reputa-



THE RAIDERS:—Left to right, Flight-Lieut. Sippe, Flight-Lieut. Marix, and Squadron-Commander Spenser Grey.

tion as a skilful flier, and did excellent work on a Caudron biplane with the Naval detachment in the Army Manœuvres of 1913. Early this year he looped the loop on the same machine. He has flown every make of aeroplane owned by the Navy, and seems equally skilful on all of them. He was educated at Radley, and his school may well be proud of him as the first British pilot to destroy an airship.

Flight-Lieut. Sippe, who is an Irishman of Spanish descent, and an old Dulwich boy, is a pilot whose ability has never had a fair chance of showing itself, since the growth of general interest in aviation. Like so many of our very best pilots he learned to fly on an Avro. In 1912 he flew excellently on one of the two Hanriot monoplanes which performed so well in the Military Aeroplane Competition on Salisbury Plain, but soon after he merged his personality in the Bristol Company and flew their monoplanes in the Italian Military Competition of 1913, which proved such a fiasco. He also flew at the Bristol Co.'s German School at Halberstadt. In June last he took a Bristol "scout" of the Barnwell-Busteed type to the big meeting at Vienna, and showed the speed of the little machine to advantage, but was continually balked by engine trouble. He joined the R.N.A.S. in July last, and is regarded as one of the best of the many fine pilots in the Service. He has lately been with Commander Samson on some of the R.N.A.S. motor-car raids.

* * *

The communiqué issued by the Secretary of the Admiralty on Sunday last contains the following reference to the Royal Naval Air Service:—

The Naval Aviation Park, having completed the attack on Düsseldorf and Cologne, already reported, has returned safely to the base, protected by its armoured cars.

MILITARY.

The following passages in the descriptive account communicated by an eye-witness present with General Headquarters, continuing and supplementing the narrative published on October 3rd of the movement of the British force and the French armies in immediate touch with it, deal with aircraft:—

Wednesday, September 30th, merely marked another day's progress in the gradual development of the situation, and was distinguished by no activity beyond slight attacks by the enemy. There was also artillery fire at intervals. One of our airmen succeeded in dropping nine bombs, some of which fell on the enemy's rolling-stock collected on the railway near Laon.

Thursday, October 1st, was a most perfect autumn day and the most peaceful that there has been since the two forces engaged on the Aisne. There was only desultory gun-fire as targets offered. During the night the enemy made a few new trenches. A French aviator dropped one bomb on a railway station and three bombs on troops massed near it.

Up to September 21st the air mileage made by our airmen since the beginning of the war amounted to 87,000 miles, an average of 2,000 miles per day, the total equalling nearly four times the circuit of the world. The total time spent in the air was 1,400 hours.

[These figures are of considerable interest, and will doubtless be of still greater interest to German Headquarters as showing roughly the number of our aeroplanes and pilots. Supposing 100 pilots were available, it would give each only 870 miles in, say, 6 weeks, or 42 days, which is about 20 miles a day each, and the time spent in the air would be only 14 hours per pilot. Or, assuming that each pilot only flies once in 3 days, it would mean one flight of an hour (say 60 miles) on each occasion. We know that some pilots have flown very much more than that, so the astute German would figure it out either that we have much less than 100 pilots, or that some of them are doing no flying—or that the figures are wrong. Further light on this point is desirable—Ed.]

The following passages from the descriptive account communicated by an eye-witness present with General Headquarters, continuing and supplementing the narrative published on October 6th, deal with aircraft:—

The comparative calm on our front has continued. Though

fine and considerably warmer, the last six days have been slightly misty, with clouds hanging low, so that the conditions have not been very favourable for aerial reconnaissance. In regard to the latter it is astonishing how quickly the habit is acquired—even by those who are not aviators—of thinking of the weather in terms of its suitability for flying. There has been a bright moon also, which has militated against night attacks.

[This habit of thinking of weather only in its relation to aircraft is one of the first symptoms of infection with the microbe of aeronautical fever. One hopes that it will soon infect the whole of both Services.—Ed.]

On Monday, the 5th, there were three separate duels in the air between French and German aviators, one of which was visible from our trenches. Two of the struggles were, so far as could be seen, indecisive, but in the third the French airmen were victorious and brought down their opponents, both of whom were killed, by machine gun-fire. The observer was so burnt as to be unrecognisable.

Artillery has up to now played so great a part in the war that a few general remarks descriptive of the methods of its employment by the enemy are justified. Their field artillery armament consists of 15-pounder quick-firing guns for the horse and field batteries of divisions, and there are, in addition, with each corps three to six batteries of 4.3-inch field howitzers and about two batteries of 5.9-inch howitzers. With an army there are some 8.2-inch heavy howitzers.

Quite the most striking feature of their handling of artillery is the speed with which they concentrate fire upon any selected point. They dispense to a great extent with the method of ranging known by us as "bracketing," especially when acting on the defensive, and direct fire by means of squared maps and telephone. Thus, when a target is found, its position on the map is telephoned to such batteries as it is desired to employ against that particular square. In addition to the guns employed to fire on targets as they are picked up, others are told off to watch particular roads and to deal with any of the enemy using them. Both for the location of targets and the communication of the effect of fire, reliance is placed on observation from aeroplanes and balloons and on information supplied by special observers and secret agents who are sent out ahead or left behind in the enemy's lines to communicate by telephone or signal. These observers have been found in haystacks, barns, and other buildings well in advance of the German lines.

Balloons of the so-called "sausage" pattern remain up in the air for long periods for the purpose of discovering targets; and until our aviators made their influence felt by chasing all hostile aeroplanes on sight the latter were continually hovering over our troops, in order to "register" their positions and to note where headquarters, reserves, gun teams, etc., were located. If a suitable target is discovered, the airman drops a smoke-ball directly over it or lets fall some strips of tinsel which glitter in the sun as they slowly descend to earth. The range to the target is apparently ascertained by those near the guns by means of a large telemeter, or other range-finder, which is kept trained on the aeroplane, so that when the signal is made the distance to the target vertically below is at once obtained. A few rounds are then fired and the result signalled back by the aviator according to some prearranged code.

[The phrase relating to "sausage-pattern" balloons evidently refers to the Parseval-Siegsfeld "kite-balloons" which were mentioned a week or two ago by our Danish correspondent, who has the distinction of being the first to draw attention to the use of these machines in this war. They are captive balloons of sausage shape and are fitted with stabilising members akin to the control surfaces of airships. These keep the balloon steady in a wind and prevent it from twisting round and bobbing about to the same extent as do ordinary captive balloons of the spherical type. Naturally, they cannot be prevented from rising and falling in gusts, but the motion is nothing like so distressing as in an ordinary "captive." Apparently the German army is using them in large numbers.—Ed.]

Among the military appointments in the "Gazettes" published above one notes the following:—

Major Musgrave has been for some time in charge of the matériel of the Royal Flying Corps at the War Office, and Major Fisher has been concerned with the administration and appointment of the personnel.

Col. C. F. Massy is the father of Capt. Massy, of the Indian Army, who was recently Commandant of the Indian Flying School at Sitapur, and is now with the R.F.C. on active service. He is a brother of Col. H. S. Massy, C.B., and has long been keenly interested in aeronautics.

Major Loftus Bryan, R.F.A., is the father of Lieut. Anthony Bryan, R.F.C., and was one of the first people in Ireland to take an intelligent interest in the progress of aviation.

Capt. Lawrence will be remembered by many as flying a Blackburn monoplane some time in 1911. He has since made a name for himself as one of the most expert fliers in the R.F.C., and has several times made the journey between Farnborough and Montrose by air. He had at one time the intention of flying the Channel on a Blackburn with a lady passenger.

Capt. Joubert was one of the first officers of the R.F.C. to distinguish himself as a pilot of Blériots. He has done a very large amount of cross-country flying on machines of this type.

Capt. C. W. Wilson will be remembered as having the good fortune to escape alive from the collision in the air at Farnborough in which Capt. Anderson and an air-mechanic were killed.

* * *

In last week's issue of this paper a letter from an officer of the R.F.C. was quoted which terminated by saying "most of the mechanics have been hit." This was evidently a mistake in transcription, and the word should have been "machines." The mechanic has, as a matter of fact, very little chance of being hit, except under very exceptional circumstances, for the R.F.C. camps are situated far behind the firing line to be out of range of the Germans' big guns. It will be remembered, however, that among the very first casualties of the war appeared the name of Sergeant-Major Jillings, and, at the time, it was suggested that there was some peculiarity about his being hit. This mystery is cleared up by a wounded officer of the Line, who says in a letter, "We passed through Maubeuge, where some of the R.F.C. then were, and I met one of their officers whom I know, and he told me that they had been reconnoitring over the Germans, and, though several shots had riddled the planes of machines, only one man, a Sergeant-Major, who was observing, had been hit." This, presumably, was Sergeant-Major Jillings, and the incident is accounted for by the fact that certain N.C.O.s and men have shown exceptional ability in reconnaissance, and are frequently employed in such work. Naturally, a clever N.C.O., with long military experience, can identify troops and estimate their numbers better than a recently joined officer, and one is glad to see that they are given the chance of distinguishing themselves in this way.

* * *

The following casualty in the Expeditionary Force is reported from General Headquarters under date October 7th:—
Officer Missing.—Boger, Capt. R. A., R.E. and Royal Flying Corps.

Captain Boger learnt to fly on a Bristol box-kite, and was appointed to the Reserve of the R.F.C. on April 28th, 1914.

* * *

"La Patrie," of Paris, quoting last Sunday from "La Presse Nouvelle," says:—Lieutenant Dawes, of the British Flying Corps, has received the Cross of the Legion of Honour. He is the second British Army aviator to receive this distinction since the beginning of the war. The first was Captain Robin Grey.

Lieut. L. Dawes, Middlesex Regiment, was recently promoted to Flight-Commander, with temporary rank of Captain. There are thus two Captains Dawes, in the R.F.C., Captain George W. P. Dawes, Royal Berkshire Regt., having been a Flight-Commander since May 30th, 1913.

* * *

Some idea of the enormous amount of work done by the

officers of the Royal Flying Corps on active service may be gathered from the fact that one officer, writing to a friend in London, says that he spent altogether 43 hours in the air during the month of August.

* * *

A cavalry officer writing home makes the following interesting reference to aircraft, in describing the work of an infantry detachment in support of which his regiment was placed:—

"As a matter of fact, they had another attack that night, because a German aeroplane had seen people digging trenches on a ridge just above where we are billeted, and so thought we were going to retire. They apparently came on in great masses, and it is said that they left 2,000 dead behind them when they were repulsed. I believe they thought we had left our trenches, and that they had only to walk into them. They got a nasty surprise."

This shows how aerial reconnaissance may be very misleading unless supplemented by scouting on land. As Colonel Sykes, R.F.C., pointed out a year or so ago, aircraft cannot replace cavalry (or other) scouts, but must work in conjunction with them.

* * *

The "Daily Dispatch" says that Mrs. Street, the mother of Sergt. Edward J. Street, of the Royal Flying Corps, who lives in London, has written as follows to a brother-in-law:—

"You will be pleased to know that Ted is doing good work, being actually the first airman to bring a German down. He has been presented with the medal of the Legion of Honour for services in the field—in his case in the air. Aren't you proud of him? I am."

Sergt. Street, who is reputed to be a crack shot, was transferred from the Coldstream Guards to the Royal Flying Corps. It is to be presumed that he was carried as passenger on account of his ability as a marksman. He is also a certificated aviator (No. 439), having learnt on a Farman at Upavon.

* * *

Private W. O'Shea, 3rd Field Ambulance, R.A.M.C., writes in a letter quoted by the "Express":—

"We were just watching an aeroplane dodging the German shells when the letters came into camp. Of course, there was a general stampede to get them.

"The valour of the airmen is beyond all praise. They fly among the bursting shells like flies dodging the rain drops. This morning I counted fifty-one shells fired at the aeroplanes. Nearly all of them burst close to the planes and 'nearly' hit them, but our men seem to bear charmed lives."

* * *

One learns with interest that the grandfather of the late Mr. C. G. G. Bayly, R.E., and Royal Flying Corps, who was killed in Belgium with Mr. Vincent Waterfall, was Colonel Jesse Coope, who held the proud distinction of being the only officer who served in both the Crimean and South African Wars.

* * *

The Paris correspondent of the "Times" writes as follows:—
"So much criticism has been levelled in England against the B.E. type of aeroplane that it is an especial satisfaction to be able to record the opinion of three members of the Royal Flying Corps with whom I was speaking this morning that this make has proved superior to any others used by our Army. ["Superior" is perhaps too great praise, but it is well that each pilot should believe in the machine he has to fly. The excellence of the B.E. as a flying machine has always been upheld in this paper. It is only its detail design and construction which have been criticised, and these have been improved in consequence.—Ed.] All three men were unanimous that these machines were fully equal to any flown by the Germans, and they added that a specially speedy type (which they called 'chasers') had just been tried with great success. These machines are capable of flying 150 miles an hour, and can rise from the ground at a very steep angle. [This evidently refers to the R.A.F. "bullet," which is a development from the Bristol and Sopwith scouts, with a 160-h.p. engine. It is enormously fast, but it would be very hard to find pilots for any number of them. Mr. Spratt is apparently about the only one available, except perhaps Mr. Wingfield Smith. The landing of such a machine is a very difficult matter, for it takes a longer run than any of the older scouts.—Ed.]

"Discussing the lessons of the war, one of my informants said that the importance of having all aeroplanes fitted with dual control had been amply proved. Only the other day he had seen a German aeroplane which had been severely attacked by several of our men near — come safely to the ground because the observer was able to assume control of the machine after the pilot had been killed. Practically all the British aeroplanes, it seems, are fitted with the dual control." [Poor "Ornis."—Ed.]

* * *

The following extracts from letters written by an officer of the R.F.C. in France to his mother are illuminating. The first letter is dated September 6th, and the more important passages run as follows:—

"It is most amusing to compare one day with another, or even one hour with the hour after it. For instance, take a typical day. At six o'clock you are just finishing breakfast. In less than an hour you are up in the air, twenty-odd miles away, with a battle going on under your very nose—hundreds of thousands of men in various positions pegging away at each other from their various trenches (a good many of them pegging away at you). It looks so funny from the air, because you can see it all and both sides, whereas down below they can't see what they're firing at in a good many cases; it is merely scientific slaughter. . .

"We have our share as well, because they have anti-aircraft guns popping at us all over the place, not to mention rifle fire and shrapnel. It is awfully interesting to notice the old positions which have had to be abandoned owing to shell fire. You can see great holes where the shells have burst all round them."

The second letter is dated September 30th, and begins:

"I got your letter to-day just after I had come back from a reconnaissance of about 120 miles. I got absolutely frozen, but I am getting used to that now. Besides, it's all in the day's work. It wasn't quite such an interesting reconnaissance as usual. We dropped one or two bombs on some bivouacs that must have stirred them up a bit, because they began firing at us with rifles. We only got hit once, but then the machine we were in is rather hard to hit because its speed is something like eighty miles an hour. [Presumably an Avro.—Ed.]

"The Germans have some special guns for dealing with aircraft. They consist of a gun which fires a kind of shrapnel shell which bursts at a certain height. As soon as they find your height they let off their shells, about seven or eight at a time, which burst all round you. Each shell is loaded with round bullets about the size of a marble, and these shoot about when the shell explodes. Whenever we go up we have these anti-aircraft guns popping off at us. We have nicknamed one of them 'Archibald.' He has a very distinctive way of firing at you. He'll let off one, just to see where it bursts, and then find out his range by it, and then let off six—one after another. We take them more or less as a joke, but I think they are pretty sure to bring one of us down sooner or later. It is really only a matter of time.

"Did I tell you about my first reconnaissance? It was at Maubeuge. I started off to fly over by Mons and Enghien and Ath—in that direction. We ran into clouds just beyond Mons, so had to turn back. As we were coming back over the French lines I saw a movement and bustle among the troops, and then there was the noise of about 1,000 rifles cracking at us. They had mistaken me for a German because my machine was different from most of the others! That was my 'baptism of fire' and I shall never forget it.

"My first sensations were of surprise, which rapidly developed into a kind of fear, which in turn changed to fascination. It positively fascinated me to see the holes appearing in the planes as each bullet ripped its way through (although there were only a few of them). I was looking at my instrument board to see what height I was, when suddenly a bullet hit the board and a splinter jumped up in front of me. At the same time a bullet pierced the petrol tank and all the petrol ran out. Another one hit one of the instruments and smashed it. When the petrol ran out there was nothing for it but to come down, so I trusted to luck, and came down in the first good field I saw

"A dozen or so Belgian and French soldiers rushed out, apparently not sure whether I was English or German till I shouted, 'Anglais, Anglais!' Then they hustled to and did all they could for me. I happened to have two tanks, so I filled up the other one and got ready to start again. The odd part of it was, shrapnel began bursting in the field next to us—one after another—which seemed to point to the fact that Germans had brought me down and not the French as I had supposed. A French major came up in a car and entreated me to hurry away. 'Vite, vite,' he said, 'les Allemands ne sont pas loin—trois kilomètres!' I didn't believe him, but all the same I got into the machine. My passenger thought we should not be able to get out of the field, but we just managed it. Just as we left the ground we were hit again; this time it hit the machine. It was altogether a most exciting afternoon. When we got back I counted twelve hits. Considering we were so low, they certainly ought to have done better than that!

"The next reconnaissance I made I had a taste of 'Archibald'—the anti-aircraft gun. We were up by Valenciennes, which was infested with Germans. Suddenly I saw five or six thick white puffs of smoke beneath us, which were shells bursting. The next time they made a better shot and were on the same level, but to the left—and so on. At one time we had eight shells bursting round us at once. Another machine was about 1,000 ft. above us at the time, and when we got back the people in it told me that they really thought we were going to be done in that time. Since then the old gun has been at us every day. One day I took up my camera and waited until it had sent up about six or seven shells and took a photo of them bursting. I hope it will come out well—although there won't be much to see.

"Strange to say, the type of machine that I flew has had extraordinary bad luck. There were only four of them, and this is what has happened to them. The first one met its end at Amiens. I daresay you read about it in the papers. It crashed to the ground and burst into flames—both pilot and passenger were burnt to death. The second one met its end on the way from Amiens to Maubeuge, the pilot breaking both his legs and the passenger being killed. The third was mine. I was turning too close to the ground and one of the wings caught in the ground and smashed itself. The machine was sent away for repairs, but I haven't heard of it since. The fourth machine was found burnt after having been missing for two days. Nothing has been heard of the pilot or the passenger, but I think they must have been shot by the Germans because the wreckage of the machine showed bullet holes in it."

This paragraph is of particular interest for it obviously refers to the 'B.E. 8's' which were 80-h.p. Gnome tractors built to R.A.F. designs. They are described by those who have flown them as being very bad fliers. The three accidents mentioned besides the writer's own are, judging from internal evidence, presumably those to the machines piloted by Mr. Copland-Perry, Mr. Smith-Barry, and Mr. Lindop, as the attendant circumstances fit exactly. The letter continues:—

"That is the worst of an Army aviator's fate. If he is brought down by the enemy's guns he just doesn't come back and is never seen again. That is what happened to poor young — and — ; they were both in my squadron. They didn't come back and nobody knew what had become of them till a few days ago, when some war correspondent who had been taken prisoner by the Germans reported that he had seen a grave with a cross on which was written 'Herr Flier,' at Enghien, north of Mons, and the wreckage of the machine near the grave answered to the description of the machine they were flying."

This, of course, is a reference to Mr. Waterfall and Mr. Bayly on the Avro.

* * *

An artillery officer writing home on September 28th says:— "We are really quite comfortable, and have a cave about half a mile away to retire into if the weather gets very bad. I do not expect we shall stop in this place much longer, but cannot tell. We are within range of the German big guns, but they cannot quite make out where we are, nor have their aeroplanes discovered us, and we ourselves have lots of aeroplanes here which chase the Germans away."

FRANCE.

The "Exchange" Telegraph Co. sent out the following message on October 9th:—

"The aviator Lieutenant Noel, of the Engineering Corps, met his death while making a reconnaissance. His monoplane capsized for some reason unknown while flying at an altitude of 4,000 feet. His passenger, Emmer, was also killed. Both had been mentioned in despatches for bravery.

"Another aviator, Gareix, holder of many world's records with passengers, was taken prisoner, and is now at Berlin."

It is unlikely, despite the "Daily Mail" and "Evening News" announcements on October 10th, that this refers to M. Louis Noel. It will be noticed that the date of the accident is not given, and, as the same message contains the news about M. Garaix which was given in "The Aeroplane" some weeks ago, the first part of the message may well refer to the death of one of the three other Noels in the French list at any time in the past, as, for instance, the one to which reference was made last week in this column. Further, M. Louis Noel is not a lieutenant, and he is not in the Engineering Corps. Taking this in conjunction with his postcard of October 9th one may hope that all is well with him. The inaccuracy of the numerous news agencies about things in general and aeronautics in particular, makes it unwise to concern oneself seriously about any of their reports.

A more serious matter, however, was a telegram received by the Grahame-White Aviation Co., who had wired on Saturday asking whether the report of the death of Lieut. Noel referred to Louis Noel of Hendon. The reply was "Confirmous mort Aviateur Noel." Still, the Aero Club de France is not noted for the accuracy of its announcements, and it is even more likely to make mistakes at present, so until one hears definitely from some of his comrades, or from an aviator who knows him well, it is very unlikely that the report is true.

Further, a postcard has been received from him written at the front on the 9th—the very day his death was reported from Paris. In this he says how pleased he is with his newest Blériot after having done 2,000 miles on the old one. He also says the weather was better last week but "d— cold"—a reminder to those who are sending warm clothes to the troops. It is hardly likely, if he had an accident after writing that postcard, that the news would have got to Paris in time for a wire to reach London that night.

As is already proved by the above, the aviator whose name appeared in the French casualty list the week before last was not M. Louis Noel. In a postcard recently received from our friend dated Paris, October 4th, which is some days after that casualty list appeared. M. Noel says: "I am in Paris for a mission. I profit to say you we are all well. I went three days ago with Captain Watt to see the English flying corps. The escadrilles are wonderfully organised, and the boys do many fine flights. I saw again Strange, Stodart and almost all the other fliers. They are very cheerful, and I felt myself absolutely as if I were in England. I leave Paris in some minutes to go away to my escadrille." His many friends who may wish to write to M. Noel may be glad to know that his address is M. Louis Noel, Sapeur-Aviateur, Escadrille Blériot, 30, 6ième Armée, 1er Groupe, St. Cyr, France.

Another post card received from him, dated September 30th, reads: "I send you this card four miles from the Boches. It is a hot day. The guns make terrible music. Captain Watt has the record to-day. He received 24 shots, and I only 9. We are unhit. It is a rotten day to fly—at 1,000-1,300 metres (3,000-4,000 feet) we are alternatively in the clouds, but otherwise can see very far. We have advantages everywhere since Friday, and the pigs are going backward."

M. Salmel, "The Daily Mail" aviator, who was called up for service with the French Flying Corps, has been wounded. He writes to the "Daily Mail" as follows:—"I am very affected to not have been allowed to serve with the British soldiers. They are marvellous. I met about a hundred cavaliers at St. Georges when coming to the hospital. I have given them ten francs to drink at my santé (health). As soon as they know who I was, they will take me on the shoulders, but the train started and I been safe for that corvée (nasty job). You can believe me, they are absolutely wonderful for their good spirit. Everybody in France like them. I had the maxillaire

droit (right jaw-bone) fractured, but I am all right again, and I am going to-morrow. Where! I do not know."

["Vedrine Deux" was always a little sportsman, so one wishes him an early recovery. The shortness of his sojourn in hospital suggests an aeroplane smash rather than a bullet wound in his jaw.—Ed.]

It is reported that on Monday, October 5th, there was a fight in the air at Jonchery, near Reims. An Aviatik type, after flying over the French, was about to return to the German lines. Immediately Sergt.-Aviator Frantz and Sapeur-Mechanic Quenault went up on an aeroplane armed with a machine gun, and gave chase. The French and German infantry left their trenches and watched the progress of the fight. Rising rapidly the French machine attacked the German in which there were two men. One of them was hit and wounded and another shot struck the motor, which broke up. The aeroplane caught fire and fell heavily in the French lines. Both the pilot and the observer were killed and then burnt. Sergt. Frantz has already been decorated with the military medal and has received the Legion of Honour. Quenault, his mechanic, received the military medal. M. Frantz will be remembered as the pilot of the quaint Savary biplane, on which he put up a number of passenger-carrying records.

The Paris correspondent of the "Morning Post" reported on October 8th as follows:—"For quite a time past Compiègne has been the scene of great aerial activity, and has had almost daily visitations of bomb-throwers. The damage done has been quite insignificant, although the principal objective has been the railway station. The German aeroplane bomb, so far as I have seen it, serves a double purpose. First, as a lethal explosive, and, secondly, as a fire-raiser. Fortunately, they seem deficient in their latter quality, for usually one can find the little bag of incendiary powder intact, which theoretically should ignite with devastating results.

"There have been some lively little encounters in the air over all this district of late in which the British aeroplanes have played a conspicuous part. I witnessed a duel which resulted in the destruction of one Taube machine bent on mischief. The Englishman had him for speed, and, using his armament, smashed his motor after a short, sharp chase, catching him from above. During the recent movement of troops our aeroplanes have been especially busy keeping away the German scouts. It is a fair criticism to say that we have them all for speed. The German aeroplanes are very numerous and very useful. The French are very plucky, but a trifle slow, and in this respect fail to checkmate the speedier Germans. But the British machines are fastest of all, especially a type of small machine which occasionally appears whizzing across the sky at an amazing speed. The obvious order to the British machines when flying over French territory is to keep low, so as to show their nationality, for many have been shot at by mistake."

[It would appear from this note that, despite "Ornis," of the "Times," the small high-speed scouts of wide range of speed have not been altogether condemned in favour of his own pet type.—Ed.]

On the 8th at about 9 a.m. a Taube from the north dropped two bombs on the goods station of La Chapelle, where there was a troop train. One fell on a heap of coal, the other forty yards from the train. Neither did any damage. The same aeroplane dropped a third bomb at Aubervilliers, on the slope of the fortifications. Three persons were injured, one of them a little girl, whose arm was torn by a fragment of the bomb. The aeroplane then turned and made off towards the north-east without flying over the city. It is supposed to have seen the approach of a French aeroplane.

It is reported that on October 8th a German Taube dropped two bombs, one on the Plaine St. Denis, where only insignificant damage was done, and another on Aubervilliers, where three persons were injured.

Mr. H. J. Greenwall, the "Express" correspondent in Paris, reports the raid by German aeroplanes on Sunday, October 11th, as follows:—"A bomb dropped from a Taube aeroplane fell in the Boulevard des Italiens just opposite where I was standing this afternoon. Only material damage was done. Twenty bombs altogether were dropped from this machine and another

over the central part of the city. One woman was killed and three injured in the Rue Lafayette alone. Three were killed and fourteen injured altogether. One bomb fell on Nôtre Dame, but did no damage.

"French aviators went in chase of the Germans, and one of them was brought down at Villers Cotterets. Bombs which it was carrying exploded, and the pilot was killed. The observer, who was seriously injured, was brought to Paris.

"A man who was typewriting near the window in his office had a marvellous escape from death. A bomb fell on the balcony, wrecked the typewriter, smashed the furniture, and threw him to the floor."

The "Times" correspondent at Bordeaux comments as follows:—

"The latest visit of a Taube aeroplane to Paris has disagreeably affected public opinion here. Astonishment is expressed that the invaders were not challenged by French airmen. It is believed, however, that the appointment of General Hirschauer as head of the Aviation Department will stimulate action in this sense. General Hirschauer is the efficient officer who organised the military aeroplane detachment at Vincennes."

[Judging by accounts of those who know something of the French aviation service it is quite time someone of real ability was appointed to re-organise the whole service, which, apart from the excellence of the pilots, is in a bad state.—Ed.]

A communiqué issued on October 12th states that a Taube aeroplane flew over Paris that morning and dropped six bombs. This time, it is said, only incendiary bombs were used, and, as far as is known, no person was injured. One bomb fell on the roof of the Gare du Nord and crashed through on to the platform. The fragments of the bomb were taken to the municipal laboratory for examination. Another bomb fell just behind the Moulin Rouge, but did no damage. A third set fire to an empty flat near the Avenue Clichy, but the fire was extinguished. Other bombs fell without serious effect in the Rue Pouchet, the Rue Cauchois and the Boulevard Bessières. Five French aeroplanes pursued the Germans. Several new escadrilles of French aeroplanes have been formed to chase hostile aeroplanes.

[One may ascribe these visits to the fact that the bulk of the Allied aircraft are on the west front, where the big fighting is taking place, for apparently in the centre things are fairly quiet, and German aeroplanes can get over the Allies' guarding lines unhindered.—Ed.]

The "Petit Journal" representative reports from Troyes that a Taube which was flying over Romilly-sur-Seine last week has been brought down.

The "Daily Mail" reports that Lord Murray of Elbank, while near Soissons on Monday of last week, was under fire for a quarter of an hour and had a lucky escape. The party was motoring near the Anglo-French lines when a German aeroplane was seen flying overhead. Heavy gun and rifle fire was opened on the car, and it was necessary to make a dash across exposed ground. This was done under a rain of shot and shell, some of the occupants of the car using their rifles in reply.—[It occurs to one that the ex-Minister must have found that the bombardment of bullets following the overhead apparition of the aeroplane was even worse than having a Marconi Enquiry hanging over one's head with a bombardment of awkward questions in prospect.—Ed.]

BELGIUM

In a diary of the attack on Antwerp, the "Morning Post" correspondent in that city writes:—

"Early on Thursday morning, October 1st, a Zeppelin entered into combat, making an attempt to bombard the forts. The attempt was a ridiculous failure, and not a pennyworth of damage was done."

The bombardment of Antwerp began at midnight on October 7th, or very early in the morning of October 8th. While the southern quarter was being bombarded a Zeppelin airship cruised above the fortifications and the city, dropping bombs on the Hoboken oil tanks, which caught fire. The tanks were at once emptied in order to prevent the conflagration from spreading.

The following vivid account of the burning of Antwerp was given in the "Observer" by Mr. George Lynch:—

"The story of the burning of Antwerp was told to me last night by the one man in the world who had the best opportunity of seeing it—an aviator—I am pledged not to mention his name. The night before the bombardment of Antwerp he encircled the city—the city which was practically encircled then by burning villages and smouldering forts. He said it was a sight of terrible magnificence, and in the quietude of a perfect autumn evening the air was so clear that even from a great height every detail was visible; but he said it was nothing in comparison to the night that followed.

"The burning of Rome," was one of his illuminating phrases. In various directions throughout the city separate fires were in progress, but the culminating effect was close to the long bridge of barges that span, or, at least, did span, the Scheldt. On the town side are situated the immense oil tanks, and these were ablaze. A huge column of flame, which he estimated was 200 feet high, streamed up solidly like the flame of a candle, and from its top a mass of inky black smoke streamed upwards. The oil had overflowed over the water of the canal close by, and the whole surface was a mass of red flame, which threw up the bridge across it in bold relief to his point of view.

[It was over this bridge that the R.N.A.S. raiding party had to make their escape, as related elsewhere.—Ed.]

"At the Antwerp side of the bridge thousands of people were massed with their horse-vehicles, ox-wagons and motors, all waiting their turn to cross the bridge, which has only a single track. The light from the burning oil column was so brilliant that the very details of the picture were visible to him. He could see the struggling bullocks and impatient horses (Mr. Deidrich, the American Consul, told me he had waited four hours for his turn early in the morning before the great rush set in). The great Cathedral, near by, was illuminated in every detail of its Gothic splendour by the gigantic flames."

Another aviator related to a friend of THE AEROPLANE how, a day or so earlier, he was out in the evening, and found himself in clouds about 2,000 feet thick. On diving through them he came out right over the German lines at about 1,000 feet from the ground. Below the thick clouds the light was dim, and all he could see was the dark shape of the city with an arc of flame from the German and Belgian guns round almost half its periphery. He was seen from below almost immediately, and fire was opened on him by high-angle guns, so that he had to climb up again into the clouds. He described the sight as magnificent but horrible, and he did not enjoy the sensation of climbing into the clouds again with a failing engine. However, he returned safely to the British lines.

The Central News Agency reported from Amsterdam on October 8th:—"During the night no fewer than six Zeppelins flew over Antwerp, dropping bombs in all directions. The extent of the damage is not known, but one of the missiles has damaged the Palais de Justice."

[This report is an absolute fabrication. There are not six Zeppelins available for the purpose in the Western war area. If the Press Bureau Censor would cut out stuff of this kind, which is calculated to scare the ignorant in this country, he would be doing better work than is being done by his department at present. Naval officers returned from Antwerp say that to the Belgians everything in the air is a Zeppelin, just as to the French every German aeroplane is a Taube. During the whole time the Naval aviators were in Belgium they never saw a Zeppelin or an airship of any kind, and the only real evidence they had of the existence of such vessels was when one of them saw the explosion caused by the bomb at Düsseldorf.—Ed.]

Interesting details of life in Antwerp during the last fortnight are given by Miss Edith Fairn, who arrived in London on Monday, October 5th, in the "Times" of October 8th. Miss Fairn had been engaged as a Red Cross nurse at the British Seamen's Hospital, in Antwerp. On October 3rd Nurse Fairn became ill, and had to go off duty. Whilst resting during the afternoon she was disturbed by a fearful fusillade, apparently just over her head. Two German Taubes had paid a visit to Antwerp, and the defenders were making great efforts to bring the aeroplanes down. Guns were turned upon them from every point, and the air was full of shot and shell, but every effort to hit the aviators failed.

Meanwhile, intense excitement prevailed in the streets. People leant out of the windows to watch the contest, heedless of the dangers from the shot and shell. One of these onlookers, a man, unhappily paid for his temerity with his life.

[The moral is, if a Zeppelin comes over London and the high-angle guns get to work, stay indoors.—Ed.]

The "Times" correspondent at Antwerp reported on October 8th: "Both sides are using captive balloons for observation purposes; and the artillery on both sides seem to get a good deal of fun out of aiming at the other fellows' balloon. The balloons are apparently twins, which perhaps adds to the zest of the sport. But so far neither side has scored a hit. Today our armoured train took a hand in the game, trying to bring down the German balloon, and was in turn made the mark of a fairly heavy fire."

Dr. Florence Stoney, a woman doctor of the British hospital service in Antwerp, in describing the taking of the city, says that, before the bombardment of the place, for two days German Taubes flew over the city at a height which the Belgian guns could not reach. It was a pretty sight to watch the little white Taube sailing along in the beautiful sky and the puffs of smoke which came from the bursting shrapnel far below them. Pointed arrows made of steel were frequently dropped by the Taubes, and they were deadly weapons against people in the streets.

A cable to the "Telegraph" from Ostend dated October 10th says:—"The German gunners were enabled to fire with remarkable accuracy thanks to the observation balloons already mentioned. It was necessary to do what could be done to put these balloons out of action. The naval men directed three rounds of shrapnel at one of them without effect, but the last of three rounds of lyddite took effect and the balloon was seen to fall. A Belgian officer who witnessed the incident was so overjoyed that he promptly took a twenty-franc note from his pocket and presented it to the gun captain for distribution among the crew."

[One would judge from this that German airships are useless and aeroplanes scarce in Belgium.—Ed.]

It is reported that Ostend was visited by a Zeppelin on Friday night the 9th. The "Telegraph" correspondent writes:—"They (refugees from Antwerp) were too much concerned with their affairs to bestow more than an apprehensive upward glance at the lowering clouds, when a sharp report rang out as we neared the quayside. It was just as well, perhaps, that they could not see the Zeppelin, which was hovering over the harbour, intent, apparently, on another attack on the railway station, which was the objective on the recent visit. More watchful eyes were, however, on the look-out. The shot we heard was fired by a quick-firing British gun from behind the fort. It failed to hit the airship, which at once sailed off. Fortunately no bomb was dropped on this occasion by the Zeppelin."

[Probably this Zeppelin was another case of "eye-strain."—Ed.]

Mr. Edwin Cleary of the "Express" reported from Hansweert on Saturday 10th that a Zeppelin, with all lights extinguished, circled over Antwerp throughout the whole of the night (Friday) and directed a terrible shell fire.

HOLLAND.

Mr. Arthur Kitson, of the "Morning Post," reports from Amsterdam:—

"I may mention that I was shown a photograph of a large aerodrome in flames, and was informed that this was taken by an observer immediately after the recent raid by our British airman (Lieutenant Collet), and represented the Zeppelin shed at Düsseldorf."

[By "aerodrome" one understands that "airship shed" is meant, and not a flying ground. If this was so, one wonders how the airship from this shed survived to be burnt by Lieut. Marix.—Ed.]

CHINA.

The following official announcement was published at Tokyo on October 11th:—

"A German aeroplane from Tsingtau made an unsuccessful attempt to drop bombs on Japanese mine-sweepers, and was driven back by a Japanese aviator.

Not "As Done."

One regrets to find that the recent sudden increase in popular interest in Service aviation has resulted in an incident which must cause acute annoyance and pain to all those of gentle birth and breeding who are connected with the Royal Naval Air Service and the Royal Flying Corps. I refer to the fact that the enterprising "publicity" agent of a firm which purveys a much advertised brand of nerve tonic has seized the opportunity to decorate his work with portraits of and testimonials from two officers of the aeronautical services. The Royal Naval Air Service is represented by Flight-Commander Grahame-White, and the Royal Flying Corps by Mr. B. C. Hucks—who in the advertisement is labelled "Flight-Lieutenant," which he is not. Doubtless the testimonials were obtained, on the usual terms, when these aviators were simple professional fliers and anxious to advertise themselves for business reasons to the greatest possible extent at the least possible expense to themselves.

In Mr. Hucks' case the portrait which appears is a very old one, showing him in flying kit, and it has appeared before in similar advertisements when he was merely a public entertainer; but in the case of Mr. Grahame-White, he appears in Naval Air Service uniform, which naturally accentuates the offensiveness of the advertisement. One would like to know whether in such a case the Service regulations concerning bringing contempt upon the King's uniform do not apply. One gathers that music-hall artists have to be very careful in their travesties of soldiers and sailors not to wear an absolutely correct uniform, and it seems that advertisement agents might come under some similar classification.

Of course, one assumes that the portrait of Mr. Grahame-White was put into the advertisement without his personal sanction, and was procured by the advertiser through some photographic agency; nevertheless, one would have expected even an advertising agent—devoid of all sense of "good form" as most of the breed are—to have obtained the permission of the original before using his portrait.

In war time one becomes accustomed to many curious things. Direct-appointment officers who are unused to the Services appear in quaint uniforms of their own devising, or the products of theatrical outfitters rather than of Service-tailors. One hears of R.N.V.R. "infantry" officers wearing "Sam Brownes" the wrong way round. One hears of a flight-commander R.N.A.S. turning up for duty as a full commander R.N., three full stripes, anchor buttons and all. One hears of a R.N.A.S. officer in uniform with a beautiful illustrated tie-pin. One hears of "inspectors" of mechanical transport, A.S.C., attending to their motor businesses two or three days a week, and spending the rest of the week in uniform inspecting competitors' products. One hears of officers in uniform conducting their own businesses and even running their own works which are engaged on contracts with the very Service in which they have managed to secure appointments which seem to involve no Service duties. And, incidentally, one hears of gentlemen who, on appointment to Service jobs, have completely severed their connection with very lucrative businesses which they have built up during the past year or two on Service contracts—which is, of course, "as done." But this is the first time in a memory of some twenty years of curious commercial habits that one has seen officers on the active list of His Majesty's Services—or Her Majesty's, in the days of the late Queen—appearing as advertisements in the Press.

One hopes that these officers will insist on a public apology being published by the advertisers, setting forth clearly that the advertisements appeared without their consent. Otherwise there seems but one alternative for them.

Zeppelinophobia.

Lieut.-Col. Roustam-Bek, late of the Russian army, makes some sensible remarks in the "Express" of October 12th. He says:—"Many people are suffering from Zeppelinophobia, among them some who ought to know better. They suggest that the Germans now have a good base for airship operations against London and the ports on both sides of the Channel. Is this so? Summing up all that the airships of Germany have succeeded in doing during the war, it seems to me that 'the devil is dreadful only from a distance,' and in reality no

serious operations of Zeppelin or other airships of the German army have had any important results. So far as we are informed, the activity of the German flying corps has been confined to dropping some bombs without any serious consequences in comparison with what had been expected. So I think that to frighten the British public with the possibility of a serious exploit by the German air navy is absolutely reasonable."

In the "Telegraph" Mr. Hurd says:—"An airship can only operate from a base provided with a specially built shed, somewhere about the size of St. Paul's Cathedral; a shed takes at least six months to build. Then, from our point of view, the nearer a German airship shed to the sea the easier it is to attack. Let us not forget the exploits at Düsseldorf. Antwerp might, of course, be the jumping-off place for aeroplanes intent on paying us a visit in London. That is a possibility, but it does not constitute a danger of any consequence. I should salute as an exceedingly brave man any German pilot of an aeroplane who, in the coming winter, flew across the North Sea, swept over London or Margate or Dover, dropping a few bombs, and then turned for home. He would deserve the fullest credit for any damage which he might do."

In a leading article the "Times" says:—"There are half a dozen other places (besides Antwerp) in Belgium which would have served them equally well as a base for Zeppelins. Moreover, Zeppelin attacks directed against England, if and when they come, will have not the slightest effect upon the ultimate result of the war. We know all about Zeppelins and how to welcome them."

These size up the Zeppelin—or other airship—question very neatly.

A Useful Warning.

The following notice has been issued at Gravesend:—
NOTICE FROM GENERAL OFFICER COMMANDING THAMES AND
MEDWAY DEFENCES.

The public are warned that in the event of hostile aircraft coming into the neighbourhood of these defences there will be a certain amount of danger to residents in the district from falling pieces of projectiles, from projectiles themselves, or from bombs dropped from aircraft. Consequently, if firing is heard people should at once take shelter. The safest places will be in lower rooms or cellars of buildings. Any persons seeking to gratify their curiosity will do so at their own risk. It will not be possible to issue any warning, and the only notice will be the firing of guns.—By Order,

A. E. ENFIELD, Mayor.

[To this one may add an example. In Belgium recently, while everyone with fire-arms was blazing at a Taube thousands of feet out of range, and everyone else was in the street gazing at it, a falling bullet struck a younger brother of the Prince de Ligne, who was standing with his face turned to the sky, and cut his throat, so that he died shortly afterwards.—Ed.]

Congratulations.

It was publicly announced on October 8th that on the previous day Mrs. Winston Churchill gave birth to a daughter. Mother and child are doing well. If heredity goes for anything, and if Miss Churchill II inherits her father's brains and her mother's looks, she should be highly influential in political circles about the time when women are admitted as members of Parliament. Everyone connected with aviation, recognising how much Mr. Churchill has done to advance the progress of flying in this country, will congratulate him and his wife on this happy event, and will wish them and their daughter all that is good.

Technical Education.

The autumn session of the Northampton Polytechnic Institute, Clerkenwell, has just commenced, and the courses of lectures in the mechanical engineering department relating to aeronautics should be of special interest to London readers.

The main course of lectures upon Aeronautics is to be taken by three specialist lecturers. Mr. T. W. K. Clarke, B.A., by special permission of the Royal Aircraft Factory, is to give a course of six lectures on "Propellers"; Mr. G. A. Burls, M.I.C.E., a special course of seven lectures upon "Aero Engines," and Mr. F. Handley Page, thirteen lectures upon

"Principles and Design Data for Aeroplane Construction," and five lectures upon "Complete Machines."

In connection with these courses there are full courses in drawing office and laboratory and mathematical work for all students who desire to study the subject of Aeronautics thoroughly. Further particulars may be obtained upon application to the Institute.

A Prisoner.

One learns that Mr. J. Herbert Spottiswoode, who was one of the first people in this country to take an active interest in aviation, is now a prisoner of war in Germany, in which country he was touring when war broke out. He says that he is being very well treated in Berlin, and has received much assistance from the American Embassy. As he is physically unfit for active service, owing to an accident to his leg some years ago, there is a hope that he may be allowed to return to this country ere long.

School and Weather Reports.

	Mon.	Tue.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Fair	Windy	Fog	Fog	Fair	Fair	Windy
South Coast	Fine	Fine	Fine	Fine	Fine	Windy	Windy
East Coast ...	Fine	Fine	Fine	Fine	Fine	Fine	Fine

Hendon.—AT GRAHAME-WHITE SCHOOL.—Instrs.: Messrs. Manton, Shepherd and Russell. Pupils with instr.: Flt.-Sub-Lieuts. England, Hart, Field, Groves and Price. Messrs. Stalker, Y. Y. Liu, Easter and Greenwood. Straights alone: Flt.-Sub-Lieuts. Giles, Allen, Messrs. Easter, Carabajal. 8's alone: Flt.-Sub-Lieuts. Riggall, Allen, Perry, and Messrs. Morgan, Carabajal, Easter. Certificates taken by Flt.-Sub-Lieut. Perry. Machines in use: Grahame-White biplanes.

AT BRITISH CAUDRON SCHOOL.—Instructors: Messrs. R. Desoutter, R. M. Murray and E. Prosser. Strts. or rolling alone: Messrs. Stevens and Beynon, Lieut. Tench and Lieut. Bird rolling; Messrs. Barfield and Gunner straights. 8's or circs. alone: Messrs. Christie, Ivermee and Moon. Certificates taken by Messrs. Abbott and Legh; Flt.-Sub-Lieut. Moon passed first two tests for his brevet in good style. Machines: Caudron biplanes, two 35 h.p., one 45 h.p. Passenger flights on 60-h.p. two-seater Caudron biplane piloted by Mr. R. Desoutter.

AT LONDON AND PROVINCIAL AVIATION Co.'s SCHOOL.—Instructors: Messrs. W. T. Warren and M. G. Smiles. Strts. alone: Mr. W. White. Rolling: Messrs. Moore, Abel, England-Derwin, Parker (new pupil). Machines in use: L. and P. tractor biplanes.

AT HALL FLYING SCHOOL.—Instructor: Mr. J. L. Hall. Strts. or rolling alone: Messrs. Rose 22 straight flights, improving. E. Brynildsen 24 straight flights, very good landings. 8's or circs. alone: Mr. E. Brynildsen. Machines in use: Two Hall tractors. New Brevet tractor biplane tried and flown by Mr. J. L. Hall. Work now commencing construction of Gnome pusher scout biplane for school use and extra practice.

AT BEATTY SCHOOL.—Instructors: Messrs. G. W. Beatty and W. Roche-Kelly. Pupils with instr.: Messrs. MacLachlan, Gardner, Aoyaag, Parker, Whitehead, Jenkinson, Monfea, Anstey Chave, Beard, Bentley, Benyon, Moore, Le Vey, Arbon, Dr. Christie, Leong, Parker, Jenkinson, Fletcher, Leeston-Smith, Newberry, Donald, Vergilio, and Burke. Certificates taken by Messrs. MacLachlan and Forbes-Bentley.

Shoreham.—AT PASHLEY BROS. AND HALE SCHOOL.—Instructors: Messrs. E. C. Pashley, B. F. Hale and C. L. Pashley. Pupils: Messrs. Menelas Babiots, J. Morrison, J. Sibley, T. Cole, 8's or circs.: Messrs. C. Winchester and T. Cole. Machines: H. Farman biplanes. Owing to the excellent weather this week a great deal of work has been possible at the school. Mr. C. Winchester and Mr. T. Cole will pass the Brevet tests next week.

Eastbourne.—AT E.A.C. SCHOOL.—Instructors: Messrs. F. B. Fowler and R. C. Hardstaff. Pupils with instr. on machine: Flt.-Sub-Lieuts. Iron (207 mins.) and Huskisson (201 mins.). 8's or circs. alone: Sub-Lieuts. Wright (180 mins.), Dawson (184 mins.), and Nicholl (188 mins.), and Petre (18 mins.). Certificates taken: A and B Certificates tests passed by Flt.-Sub-Lieuts. Wright, Nicholl and Dawson. Machines: E.A.C. biplanes.

Doings at Shoreham.

At a meeting held in Shoreham on October 7th, with several officers of the 71st, 72nd, and 73rd Brigades now encamped at Shoreham, it was unanimously agreed that a series of sports meetings should be organised by the Sussex County Aero Club and under the patronage of Sir John Ramsay, K.C.B., and officers of the various brigades. The first military sports of the 71st Brigade were held on Sunday last.

Isle of Sheppey.

There has been a good deal of flying in this district during the week. Among the machines out were:—Deperdussins, Maurice Farmans, Vickers gun machines, Bristol tractors, and a number of Shorts. Mr. Alec Ogilvie made several fine flights during the week on his 50-h.p. Wright biplane. Mr. L. Jezzi was out on Saturday and Sunday with passengers on his little tractor with the 35-h.p. J.A.P.

Southampton District.

A large amount of work has been done lately, several machines being out at once. The Wight seaplanes have been hard at work every day, and the Avro "pusher" has also flown very well. The Henri Farmans were out several times, and Sopwith tractors also busy. The Sopwith bat-boat has also been out.

The Avro "Circuit" tractor proves a splendid machine in every way, and has been much used since its arrival. Its performances have been wonderful, and it is a particularly steady machine in a breeze. Last Sunday afternoon the Avro "Cir-

cuit" tractor passed over Netley Hospital, which is at present very full with wounded soldiers, including a great many Germans. As soon as the engine was heard the windows in every ward were alive with interested soldiers who were delighted at its splendid flying, and the Germans were by no means backward in this respect, although it would be interesting to know the thoughts of a few of them.

Dunnes for U.S.A.

All those who have followed and admired the good work done by Mr. J. W. Dunne in connection with inherent stability will be glad to hear that the Blair-Atholl Syndicate has received an order from the United States Government for two biplanes for the American army for use on land, and two biplanes fitted as seaplanes for the navy. Presumably, as his firm is not manufacturing war material for the British Army, it is at liberty to supply aeroplanes to America.

One hears excellent reports of the machines built to Mr. Dunne's designs by Mr. Burgess, of Marblehead, U.S.A., and an American aviation officer who was recently in this country gave the writer a glowing account of the good work performed by these machines and the ease with which they can be flown by untaught pilots.

One hopes to see the type still further developed ere long. It is noteworthy that the Dunne is the only machine actually flying which is indisputably clear of the Wright patents, though others have designs in hand for aeroplanes which, like the Dunne, require no rudder.

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PHOTOGRAPHS.

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THE AEROPLANE



Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.
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WEDNESDAY, OCTOBER 21, 1914.

No. 17

THE NEW DRAFT.



The First Batch of R.N.A.S. Pupils at the Eastbourne Aviation Co.'s School. Top Row (left to right): Probationary Flight Sub-Lieuts. Huskisson, Wright, Nicholl, and Iron. Lower Row: Prob. Flight Sub-Lieut. Petre, Mr. F. B. Fowler, Chief Instructor, Mr. Hardstaff, Assistant Instructor, Prob. Flight Sub-Lieut. Dawson.

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Unmentioned in Despatches.

All those who have followed the fortunes of the Royal Flying Corps from its early beginnings, when it was hampered by Treasury parsimony, the conservatism of obsolete officers, and the machinations of self-seeking civilian officials, to the present moment when it occupies a position of importance in the estimation of commanding officers, the troops in the field, and the civilian population of this country and France, which is out of all proportion to its numbers, will rejoice in the handsome recognition its services have received from Field-Marshal Sir John French in his despatches published on Monday. The Royal Flying Corps is a very small thing numerically. It is, all told, little if any bigger than a battalion of the line, though it contains more officers, owing to practically all the pilots being of commissioned rank, yet its work attracts more attention than that of any other half-dozen regiments, and more of its officers and men are mentioned in despatches than those of any other corps, except perhaps the Royal Artillery and the Royal Engineers, in both of which there are many times the number of men.

As yet one can only gather in a general way what our military aviators have done to distinguish their corps and themselves, and the individual deeds which have won mention in despatches are not made known to us. It seems fairly certain that they practically saved the British Expeditionary Force by the information they discovered during the "wash-out" at Mons and afterwards, and if the British troops had broken then, the French Army, as it was then composed, would almost inevitably have crumpled up. Later, again, they gave valuable information of the German Army in the attempt to break the French line between Paris and the forts on the Eastern Frontier. Later, again, they reconnoitred every movement of the German withdrawal to the Aisne, and during that time obtained such a mastery over the German aviators that they almost prevented them from discovering the movements of the Allied troops.

It was not until nearly this period that the crack French civilian aviators, hitherto held in reserve to the south of Paris, were brought up to the front to supplement the efforts of the few really efficient French military pilots. Since then, the French and British pilots together have practically swept the German aviators out of the air, despite the numbers of their machines, and this has seriously hampered the operations of the German armies. The few Germans who have flown over Paris recently do not count.

Cheering if Betated.

It must be remembered that the Battle of the Aisne was all over by October 8th, when Sir John French sent his despatch, published on the 10th. A private message from France, emanating from the aviation service, dated some days earlier than that, and received by me about the 10th, intimated that it was "all over bar the shouting," and that the forces had advanced about 20 miles that day. For obvious reasons it was not advisable to publish the fact, but as the aviators see more of the game than does anyone else it was quite good enough information to remove any

feelings of depression which might be hanging about this district.

Of course, the retreat of the German Army from the Aisne does not mean the defeat of Germany, but while people in England have been feeling unhappy over the capture of Antwerp, which does not really matter much, and the possibilities of Zeppelin raids, which cannot do any serious harm and may do quite a lot of good at some small expense to house property, things have been happening in the North-West of France which, if known, would be quite cheering.

Perhaps by the time these notes appear those who are conducting the war may see fit to announce what has occurred, or (who knows?) we may have had a setback on the Belgian frontier, but anyhow, up to the end of last week things had been going very nicely. One aviator I met for a few moments told me that he had been flying all over that part of the country, and that we had made remarkable progress. From another source, also connected with aviation, I learn that the big battle that has been fought around Arras and Lille has gone altogether in our favour, far more so than the newspaper reports admitted, and all progress in that direction means that the Germans are forced to leave their carefully prepared defences along the line between Roye and Verdun, as their lines of supply from Belgium are cut. Unless Germany has some hundreds of thousands of absolutely fresh first-line troops to bring in through Belgium, or to throw onto the Eastern French Frontier while we are busy in the North-West, it looks as if the German Army must leave France, and perhaps be forced out of most of Belgium during the next month or so. And one may be fairly sure that long before such troops can come into action they will have been discovered by our aviators.

"Tea and Taube" in Paris.

This movement of troops and the corresponding movement of air scouts to the North-West naturally opened the aerial route to Paris from the German lines north of Reims and thereabouts, hence the renewed visits of German aeroplanes to the Capital during the past week or so, but apparently Paris did not worry much about them. In fact, one charming little lady in Paris, the wife of an officer of the R.F.C., writing to her brother in London last week, said that they rather hoped they might see more of the German machines, and so have a view of a fight between them and the French aerial patrols. According to her it was quite the proper thing to invite one's friends to "*flivocloquer pour prendre le Thé et Taube*," being careful to choose a café with a good view of the Place de la Concorde with the Eiffel Tower in the distance—the wireless installation on the Tower and the Government buildings in the Place being apparently the objectives of the invaders. However, the air patrols seem to have become too efficient of late, and the *flivocloqueurs* have been regularly disappointed.

An Aerial "Scrap."

In the North-West our dominance in the air is as marked as ever, and aviators tell me that whenever a British or German aeroplane appears the Germans

always recollect a pressing engagement at home; in fact, the sight of a machine on the ground ready to start is generally enough. I am told that rather a pretty piece of work was done near St. Omer only a week or so ago. A pilot on a genuine Taube hove in sight at a considerable height, and as soon as he had passed overhead half a dozen British machines started to fetch him down. Some went to head him off and others to cut off his retreat, so in a few minutes he was surrounded by a circle of machines, each faster than his own. Between them they killed the observer and wounded the pilot, who managed to land without smashing up, and was promptly taken prisoner. It is said that several pilots of the Naval Air Service were mixed up in this affair, and apparently the shore-going Naval aviators are getting all their share of work.

The Cheerful Naval Brigade.

Incidentally one may remark that this country has incurred a fresh debt to Mr. Churchill and Captain Sueter, R.N., through the good service done by the Naval aviators on the Continent. Certain bigoted enemies of Mr. Churchill's have lately arisen again in the Press, and have abused him for taking the Naval Brigade to Antwerp, reminding him that he is not a Napoleon, and that his job is to stay in London and work. One would like to remind them of one John Churchill, later Duke of Marlborough, who showed some military ability at a critical period of this country's history, and to point out that by holding Antwerp for a day or two longer we were enabled to place our troops in the North-West of France to better advantage, and also we are to the good over that little matter of the second raid on Düsseldorf and Cologne. And surely Mr. Churchill may take a few days' holiday occasionally. There are a great many of us who cannot afford to throw up our jobs but would willingly take a week or a fortnight off once every three months or so, and go and have a week or ten days in the trenches, or driving transport wagons, or helping in some other way, and come back to work if still alive. Personally conducted tours to the trenches would be a very popular form of winter holiday.

One notices that the people who are most pleased with Mr. Churchill are his so-called "victims" of the Naval Brigade. So far as the infantry are concerned, they are of exactly the same stuff as K. of K.'s New Army, and the chief ambition of every man of them is to get to the front. These boys who enlisted a month or so ago, and now come back as war-stained veterans after four days' marching and fighting, are "as pleased with themselves as a dog with two tails"—to use their own expression—and are the envy of all their friends. Those who saw them at work tell me they were as steady in the trenches as any seasoned troops could be, and got used to the shells from siege and field guns in an hour or two.

Another Unofficial Story.

Talking of Cabinet Ministers and trenches reminds me of a priceless story—also unmentioned in despatches—brought home by certain impenitent thieves of aviators. There is, attached to Headquarters Staff, a certain politician whose name is well and unfavourably known to all connected with flying. Since he joined up, he has made himself equally unpopular among simple-minded soldiers, for it is said that he has an unpleasant habit of walking boldly up to a trench which is not under fire, and holding converse with the occupants. In about three or four minutes, during which the German gunners have had time to calculate the range nicely, he walks off to his car and is whirled away elsewhere, and the trench is under shell fire for a few hours.

The story goes that he recently sent in a note to the C.-in-C. to say he wished to recommend his chauffeur for the V.C. Back came a polite reply asking him to specify the particular deed for which the decoration was deserved. His answer was simply, "My chauffeur

has accompanied me wherever I have been." However, he met his match not long ago, when, owing to the absence of the said invaluable chauffeur, a mere aviator offered to drive him whither he wished. The politician regarded him gravely and said, "I don't know whether you realise what you are offering to do. I warn you that driving me is no matter to be lightly undertaken. I always go where the fighting is thickest and the fire is hottest." At which the aviator smiled his most child-like and bland smile and replied, "It's all right, Sir! I don't think I shall get cold feet going anywhere you want to go!" The politician has no sense of humour, but I gather that he looked puzzled by the reply for quite a while.

Lowering the Flag—New Style.

There are certain other little matters also unmentioned in despatches which may be of interest or provide mild amusement. For one thing, I hear that though our raiders at Düsseldorf and Cologne did not drop notes, polite or otherwise, on the population, as is the German custom, they took with them on each occasion sundry tiny silk Union Jacks, which they dropped overboard after their bombs. Probably these would have quite the necessary effect.

Aeroplanes Over Gun-fire.

Apropos aeroplanes over gun-fire, though up to the time of writing I have not heard of anyone being hit by the Germans' high-angle guns, some of them have had fairly narrow escapes. Fortunately, as one military aviator said, after flying some thousands of miles over the German lines, and having his machine hit by rifle fire and shrapnel bullets,—“They are rotten game shots.” Another pilot says that the shooting is improving, and, as the guns can at extreme range reach to about 7,000 metres—or say 22,000 feet—vertically, it is useless to try and get above the shells, so one simply has to trust to being missed. One pilot says that actually the safest thing to do is to “fly like a jack-snipe,” on a very fast machine. His idea is that by constantly twisting and turning at about 85 to 100 miles an hour at a height of only about 700 to 1,000 feet one would escape being hit by rifle fire, and the high-angle guns would not burst their shells so low.

Certainly now the Autumn is on us, and the Winter approaching, with low clouds and thick weather, the notion is worth considering, for the pilots will have to fly low to obtain any information at all, and their only hope will be to fly by compass in or above the clouds, and dive through them for a few seconds to do their jobs. A terrific spiral dive out of a cloud at 140 or 150 miles an hour on a high-speed scout, followed by a proportionately rapid ascent into obscurity, would put the best high-angle gunner off his game.

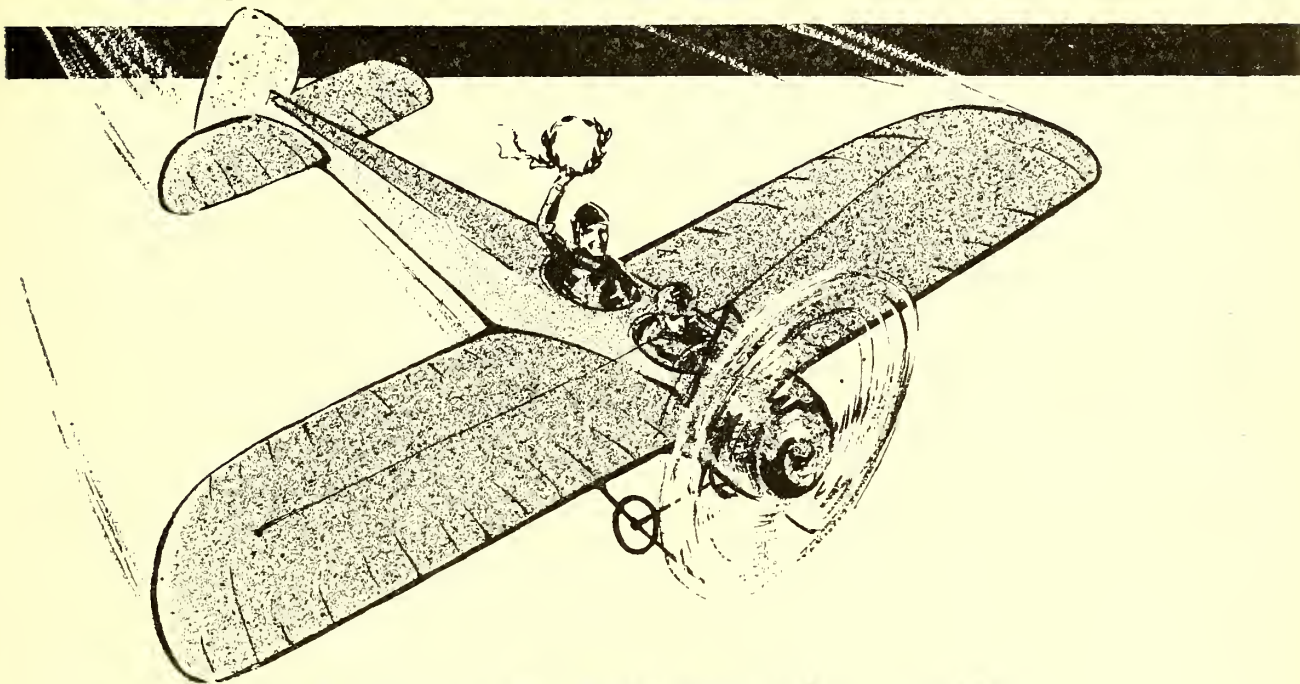
Friendly Clouds.

Hitherto we have regarded clouds as our worst enemies, but now they are likely to be very useful, as many pilots have found. One of them remarked to me the other day that he had never looked on a cloud as a personal friend till he became the sole aim and objective of half a dozen guns at about 3,000 feet with a nice fat cloud only about half a mile away. He said he went into covert like a rabbit.

Another pilot said he found himself one day with fourteen shells—he counted them—bursting all round him in a circle, and he could not make up his mind whether to carry on and chance running into the next one fired in front of him, or to loop the loop and come back to the point from which he started the loop, in the hopes that the next “bouquet” of shells would be fired in front of him in expectation of his flying straight ahead. Eventually he dodged sideways, and escaped altogether, but, as he said, it was purely a matter of luck.

How a Bull's-Eye Feels.

In one way, apparently, flying within rifle range is worse for the nerves than even standing up to be shot at, for the wings of an aeroplane cover so much space



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"possessed the greatest percentage of attributes desirable in an
aeroplane engine." The Green Engine Co. inform us that
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that they are frequently hit, although the fuselage and its inmates escape. On the ground one hears the bullets sing past, but one has no idea how close they have been, whereas when they hit the wings of an aeroplane one finds oneself mentally registering "inners" and "outers," as the holes appear in the fabric and wondering how long it will be before they score a "bull," with oneself as the bull's-eye. Besides, as my young friend remarked, on the ground one is only a unit in a line, and no one among the enemy cares whether he hits one or the next man, but when one is in an aeroplane they display "such beastly personal animosity."

Still, it is wonderful what a little rest will do, and I find that though pilots who have been over fire and

have had innumerable narrow escapes admit they were frightened out of their skins at the time after they have been home for a few days they are as anxious as ever to get out again.

We are learning much in this war, and one of the most valuable things we have learnt is that despite all our so-called civilisation and racial decadence we still preserve the same cheery breed of sportsman who scuppered enemy ships on the Spanish Main in the days of Good Queen Bess, and has led semi-piratical raids to the ends of the earth. He is not much of a strategist or tactician as a rule; he is "out for blood," or, in the impolite phrase of our polyglot Services, he goes "sans culottes pour la Gloire," but he does very valuable work, and deserves the praise he gets.—C. G. G.

The Result of the Aero-Engine Competition.

On Thursday of last week the following communiqué was issued by the War Office:—

RESULT OF THE NAVAL AND MILITARY AEROPLANE ENGINE COMPETITION, 1914.

The Army Council have decided, on the recommendation of the Judges' Committee, to make the following awards:—

The prize of £5,000 to the Green Engine Company for the Green 100-h.p. water-cooled engine No. 1, which best fulfilled the requirements of the competition and possessed the greatest percentage of attributes desirable in an aeroplane engine.

Awards of £100 for each engine to the undermentioned firms in respect of the engines entered by them which performed successfully the eliminating trial of a six-hours' continuous run at full power:—

Argylls, Ltd.	£100
Beardmore Austro-Daimler Engine Co	200
British Anzani Engine Co.	100
Dudbridge Ironworks Co.	300
Gnome Engine Co.	200
Green Engine Co.	100
Sunbeam Motor Car Co.	100
Wolseley Tool and Motor Car Co.	200

War Office, October 15th, 1914.

The triumph of the Green engine in this competition was confidently expected by its makers, barring unforeseen accidents, and no one who has followed the career of the engine will be at all surprised at the result, despite the fine showing of several of its competitors. Ever since aeroplane engines became a possibility the Green has been well to the fore.

With a very early Green Mr. J. T. C. Moore-Brabazon won the "Daily Mail's" first £1,000 prize for flying the first mile in a closed circuit on an all-British aeroplane. Out of eight Michelin prizes, for duration in the air, or for speed over set courses, on all-British machines, the Green engine won seven, five of them being won by the late Mr. S. F. Cody with various types of 4-cylinder 60-80-h.p. Greens, and the sixth with a 6-cylinder 100-h.p. Green. The seventh was won by Mr. Carr on the big Grahame-White five-seater with a 6-cylinder 100-h.p. A 4-cylinder 35-40-h.p. Green won the first Patrick Alexander £1,000 prize for a non-stop run on a test, and a 4-cylinder 100-h.p. won the second of these competitions.

Besides these prizes, much notable work has been done with Greens. On an aged Avro with a 35-h.p. Green many of our finest pilots learned to fly, notably Messrs. Pixton, Raynham, and Sippe. On a Sopwith with a 100-h.p. Green Mr. Hawker put up his fine attempt on the Seaplane Circuit of Britain for the "Daily Mail" £5,000 prize. On the Grahame-White five-seater with a 100-h.p. Green innumerable passengers have been carried and long distances have been flown. On the totally enclosed Avro with a 4-cylinder 80-h.p. Green, in the Military Competition of 1912, the late Lieut. Parke, R.N., put up a really remarkable performance. In fact, whenever a Green engine has been given a fair chance and has been intelligently handled by unprejudiced people it has more than held its own.

Unfortunately, it, or its makers, failed to find favour with those who at one time were all-powerful where the matériel of Service aviation was concerned, and its makers were discouraged in a way which to unprejudiced observers seemed

intentional. People who had ideas of their own on engine design some two or three years ago—ideas which have since proved abject and expensive failures—damned the engine out of hand, when a little encouragement from them would have produced new and improved and more powerful types of Greens, so that to-day we should have had an unlimited supply of these engines of bigger power even than those which have just done so well in the trials.

As it is, one is happy to learn that Green engines are in strong demand and that supplies will shortly be plentiful; but the fact is due to Mr. Fred May, who has financed the engine single-handed for some years, being one of the most obstinate men in the world, and not to any encouragement his firm has received in the past. Or, rather, one should say it was without encouragement until about a year ago, when the Air Department at the Admiralty, which has always been notable for the ability of its engineer-officers, made up its own mind to give the Green a fair chance, instead of allowing outsiders to interfere. The result has been quite satisfactory.

Now the Green has again showed its reliability, and one hopes to see it more generally encouraged. It has been said by interested persons that a bench-test proves nothing, for the conditions on an aeroplane are quite different. I therefore venture to suggest a couple of tests which should settle that question right away. The Army has certain R.E.s fitted with Austrian-built engines, built before Beardmore's began to deliver their British-built Daimlers. Also, the Navy has a couple of D.F.W.s and one Albatros, all fitted with 100-h.p. Mercédès engines. The exact climbing rate and flying speed of those machines with given loads is known with certainty. Let one of each of those types be fitted with a 100-h.p. Green, which is supposed to give about the same power, and let us see whether the machines fly better or worse when so fitted. The D.F.W. would be a particularly good test, for she is always somewhat "soggy," and if the Green is better than the much-vaunted German engine, as I believe, she would show the difference at once. I may add that I have not mentioned this idea to anyone connected with the Green, so there is no collusion.

Though the Green has won on points, its victory was by no means easy, for three at least of its competitors ran it very close. These, one gathers, were the 100-h.p. monosoupape Gnome, one of the Dudbridge-Salmson-Canton-Unné water-cooled radials, and the Anzani built by the Coventry Ordnance Works. Rumour at Farnborough has it that they all ran till everyone was tired to death of hearing them, and that, when war broke out and it was advisable to shut down the competition, inquiries as to how much longer they were prepared to go on running only brought the reply that they were all game to go on till the war was over. Therefore it was thought better that they should go and run in aeroplanes and annoy Germany.

The three runners-up deserve every congratulation on their fine performances, and one hopes to see them duly encouraged with orders. The Gnome, now being built by the Daimler Co., and the Salmson, being built by Willans and Robinson, are already in great demand, and the good work done by the various small Anzani's in use on Caudrons, and the 100-h.p.s on the Handley-Page and Deperdussin, seem to show that this

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NAVAL AND
MILITARY
AEROPLANE
ENGINE : :
COMPETITION



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make is well worth using. One gathers that the Anzani starting-gear on the Navy's seaplanes has given trouble, but that has nothing to do with the reliability of the engines.

Several of those which completed their six hours' test have already done good work in aeroplanes, notably the Sunbeams and Beardmore-Daimlers. The Sunbeam in the Maurice Farman at Brooklands seemed able to run for ever, and one gathers that the big one on the Avro "Circuit" seaplane is equally good. The Admiralty has already ordered many more. The Beardmore-Daimler, built by Arrol-Johnstones, now seems to be doing very good work also.

One gathers that the Wolseley firm are making Renaults to R.A.F. order, so that presumably their own engine will again be laid aside, as has already been done on previous occasions. It is to be hoped that the sleeve-valve Argyll will not be allowed to sink into oblivion. Its valve-action is most fascinating and the engine deserves to be developed still further.

Altogether the result of the competition may be regarded as quite satisfactory, and it certainly occurred at a very opportune time, in that it turned the attention of several big firms to aeroplane engines and induced them to start manufacturing just when we need engines most. I only wonder the German Press Bureau has not seized on this as another proof that we had arranged for the war to start when it did.—C. G. G.

Accessories During the Fact.

Throughout the Naval and Military Aeroplane Engine Competition Shell Spirit was used, the purity of the firm's products ensuring freedom from petrol troubles, and so guaranteeing to every competitor that his engine would have a fair chance.

In the winning Green engine Vacuum Mobiloil, of the famous "Gargoyle" brand, was used for lubrication. The well known uniform quality of the oil and its excellent lubricating properties account for the Green Engine Co. choosing this lubricant. The result shows that their confidence was not misplaced.

The winning engine was fitted with Zenith carburettors, which, as the results show, gave no trouble throughout.

A Suggestion for the S.M.M. & T.

A correspondent complains that young men of apparently good physique who are engaged for anything up to a hundred hours a week in turning out munitions of war for the Navy

and Army have to put up with a good deal of insult and annoyance in such little time as they can spare for recreation from self-styled recruiting agents, male and female. He suggests that men who are serving their country in this unilluminated but necessary way should wear a distinguishing badge of some sort, and that a suitable mark for men engaged on the production of aircraft would be a badge consisting of a "Gnome engine and propeller," with O.H.M.S., or W.D., or a pair of Flying Corps wings, selling at 1s., 2s., or 2s. 6d., and that the profits should go towards the Prince of Wales' Fund or to buy comforts for the men of the Royal Flying Corps.

The idea has distinct advantages, and one would like to have official sanction for such a badge. The matter is one which the Aero Section of the S.M.M. and T. might well take up with the authorities. The badges should, of course, be supplied to the workers through the offices of the employers, so as to ensure their only being issued to men employed in the industry.

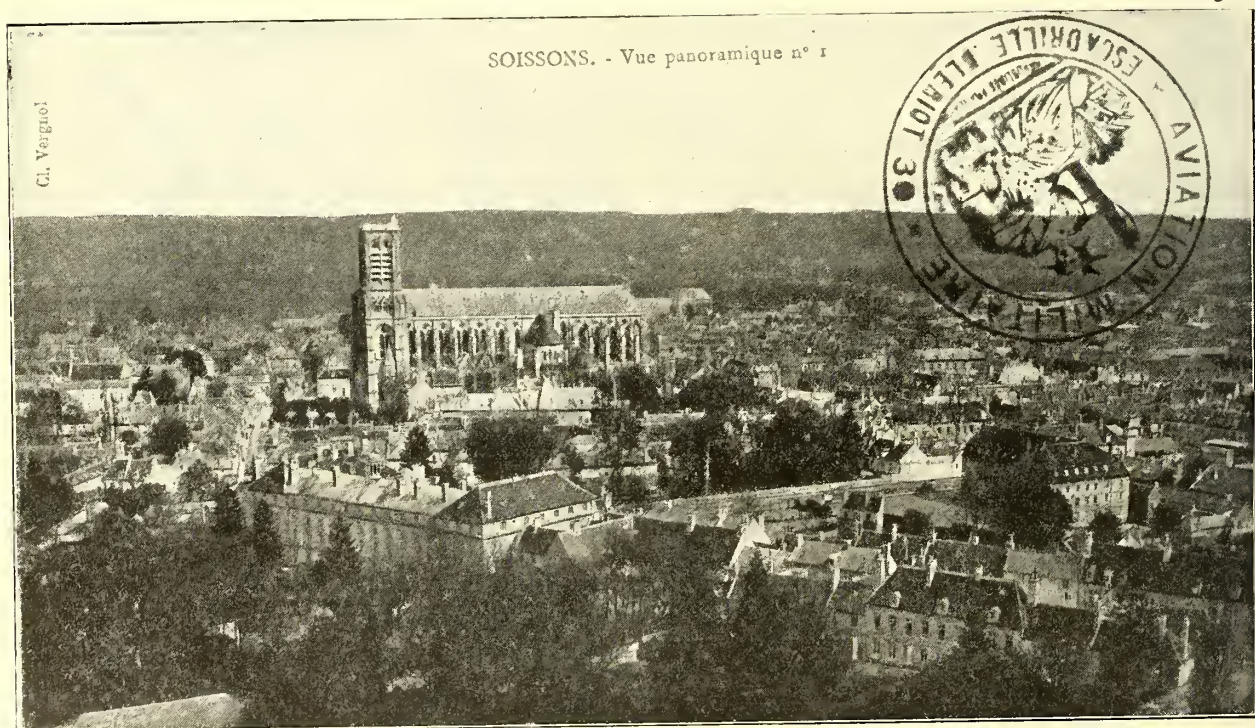
Some firms already issue to their employees cards bearing a reprint of Lord Kitchener's letter to armament firms assuring them that their men are doing the nation's work, and these are well enough in an argument, but a badge which would prevent an argument from beginning would be preferred.

The hardship for many of these young men is all the greater because they have tried to enlist and have been turned down by the doctor. Others who are skilled aeroplane hands have tried for the R.F.C. or R.N.A.S. and have been refused on account of no more hands being needed, and they are of more use where they are than at the butt of a rifle.

Air Service Comforts.

Just a reminder to all readers who have not sent their contributions to the funds for comforts for the R.N.A.S. and R.F.C. that there is no time to lose. On the Continent winter comes much more quickly and more severely than it does here, and those warm woolly things are wanted at once, so please hurry. Those for the R.F.C. should be of khaki wool and those for the R.N.A.S. of blue wool. If there is no time to make the things send the money instead.

Contributions for the R.N.A.S. should be sent to Mrs. Sueter, "The Howe," Watlington, Oxon. Those for the R.F.C. should go to Lady Henderson, 8, Chesterfield Gardens, W.



SOISSONS AS IT WAS.—This postcard of Soissons was posted in that town by M. Louis Noel on October 15th. It shows how the place looked before the bombardment. Now the tower of the Cathedral is down and most of the chief buildings have been smashed. Note the military stamp on the card. The fact that the card could be purchased so soon after the bombardment shows that the French also believe in "Business as Usual."

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Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," October 13th, 1914:—

War Office, October 13th. Regular Forces.

SPECIAL RESERVE OF OFFICERS.—Royal Flying Corps (Military Wing).—Second Lieut. (on probation) William C. Adamson is confirmed in his rank.

A Fourth Supplement to the "Gazette" of October 13th contains the following military appointments:—

War Office, October 15th. Regular Forces.

Special Reserve of Officers. Reserve Units. Cavalry.—South Irish Horse.—Second Lieut. Loftus A. Bryan is seconded for duty with the Royal Flying Corps, Military Wing. Dated August 4th, 1914. Second Lieut. Loftus A. Bryan to be lieutenant, under the provisions of paragraph 105, Regulations for Officers of the Special Reserve. Dated May 10, 1914.

Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—The undermentioned second lieutenants. Dated September 16th, 1914: Arthur L. Russell and Denys C. Ware.

From the "London Gazette," October 16th, 1914:—

MEMORANDA.

Captain Basil H. Barrington-Kennett, Grenadier Guards, employed with Military Wing, Royal Flying Corps, to be brevet major. Dated August 22nd, 1914.

The undermentioned to be temporary captain: Second Lieutenant F. Conway Jenkins, Royal Flying Corps, Special Reserve. Dated September 7th, 1914.

A Fourth Supplement to the "Gazette" of October 16th contains the following military appointments:—

War Office, October 19th. Regular Forces.

COMMANDS AND STAFF:—

The undermentioned temporary appointments are made at the War Office: Captain John T. Dreyer, Royal Artillery, to be a deputy assistant director and to be temporary major whilst so employed, vice Captain (temporary Major) H. Musgrave, Royal Engineers. Dated September 15th, 1914. Quartermaster and Honorary Lieutenant Thomas Lyons, Royal Flying Corps, to be a staff captain, vice Captain J. T. Dreyer, Royal Artillery. Dated September 15th, 1914.

ROYAL FLYING CORPS (Military Wing).—The undermentioned to be flying officers. Dated October 3rd, 1914: *Captain John F. A. Kane, the Devonshire Regiment; *Captain Arthur D. Gaye, the Bedfordshire Regiment; *Lieutenant John L. Kinnear, the King's (Liverpool Regiment); *Lieutenant James D. G. Sanders, Royal Artillery; *Lieutenant Evelyn P. Graves, Royal Artillery; *Lieutenant Henry G. L. Mayne, the King's Own Scottish Borderers; *Second Lieutenant Dermot R. Hanlon, Royal Artillery; *Lieutenant Gerald D. Mills, the Sherwood Foresters (Nottinghamshire and Derbyshire Regiment); Lieutenant Lance G. Hawker, Royal Engineers; and *Lieutenant Gerald G. Carpenter, the Suffolk Regiment. *To be seconded.

Lieutenant C. F. Lee, West Somerset Yeomanry, to be a flying officer. Dated September 2nd, 1914.

Lieutenant C. F. Lee, West Somerset Yeomanry, a flying officer, to be adjutant with the temporary rank of captain whilst so employed, vice Captain R. Pigot, the Rifle Brigade (the Prince Consort's Own). Dated September 24th, 1914.

NAVAL.

The following appointment was made at the Admiralty on October 15th:—Staff Surgeon P. T. Nicholls, to the "Pembroke," additional, for Isle of Grain Flying Station, temporary, to date October 14th.

The following appointments were announced at the Admiralty on October 19th:—

Flight Sub-Lieutenant T. W. Elsdon, to the "Pembroke," additional, for Calshot Naval Air Station, as Acting Flight Lieutenant, to date October 16th.

Probationary Flight Sub-Lieutenants—A. R. Arnold confirmed as flight sub-lieutenant, August 1st, and appointed to the "Pembroke," additional, for the Royal Naval Air Service, to date October 5th; W. H. S. Garnett confirmed as flight sub-lieutenant, August 14th, and appointed to the "Pembroke," additional, for Royal Naval Air Service, to date

October 12th; P. L. Holmes confirmed as flight sub-lieutenant, August 1st, and appointed to the "Pembroke," additional, for Royal Naval Air Service, to date October 12th.

* * *

"In the North Sea lived a Wha-a-ale":—It was rumoured in Harwich on the evening of October 15th that a Zeppelin had been seen flying on the North Sea surrounded by British destroyers. The story was brought into port by the crew of the Great Eastern steamer "Colchester," which arrived from Rotterdam. They stated that when within 25 miles of Harwich they saw a large object of a yellowish tint on the water, with two destroyers near by. The weather was hazy, and it was difficult at a distance to determine precisely what it was. One of the destroyers fired at it; the other steamed away. The true explanation of the incident was afterwards stated in naval circles to be that the supposed Zeppelin was merely a dead whale, and that the carcass was fired at with the object of sinking it.

"Did it look like a whale?" the local correspondent of the "Telegraph" asked one of the steamer's crew.

"Oh, yes, it might have been," he answered.

—[As a matter of fact it was probably one of the R.N.A.S. spherical balloons, used for training purposes, which is known to have broken away without its crew somewhere about that date. Meantime zoologists might like to investigate the evidence of a new breed of yellow whales.—Ed.]

* * *

There has not been so much flying this week in the Sheppey district, but many machines have been about, piloted by the more experienced aviators, the machines up being Vickers gun-carriers, Deperdussin monoplanes, Maurice Farmans, and several Shorts, all making good flights.

* * *

Owing to the weather, the amount of flying in the Southampton district has not been great. On Friday night an aeroplane flew over Hamble, but could not be discerned, owing to the darkness, and if a good landing was afterwards made, it would have said a lot for the pilot's skill. It probably accounts for rumours of Zeppelins in various places. A naval Avro tractor flew up Southampton Water on Friday, returning about an hour later.

The Sopwith tractor (170) after being altered at Woolston was brought out again, but had trouble with the engine.

Another Sopwith tractor was out twice on Wednesday and made splendid flights, getting off very quickly and climbing well.

Good work has been done on all the usual machines, such as Sopwiths, Avros, Farmans, Wights, and other seaplanes.

MILITARY.

The following passages in the descriptive account published on the 16th and written on the 13th, communicated by an eye-witness present with General Headquarters, continuing and supplementing the narrative published on October 11th, deal with aircraft:—

Details have now been received of an exciting encounter in mid-air. One of our aviators, on a fast scouting monoplane, sighted a hostile machine. He had two rifles fixed one on either side of his engine, and at once gave chase, but lost sight of his opponent amongst some clouds. Soon, however, another machine moved into view, which turned out to be a German Otto biplane, a type of machine which is not nearly so fast as our scouts. Our officer once again started in pursuit. He knew that, owing to the position of the propeller on the hostile machine, he could not be fired at when astern of his opponent. At 60 yards' range he fired one rifle without apparent result. Then, as his pace was carrying him ahead of his quarry, he turned round, and again coming to about the same distance behind, emptied his magazine at the German. The latter began at once to descend, as if either he or his machine were hit. Shutting off his engine and vol-planing to free his hands, the pursuer recharged his magazine. Unfortunately it jammed, but he managed to insert four cartridges and to fire them at his descending opponent, who disappeared into a bank of cloud with dramatic suddenness.

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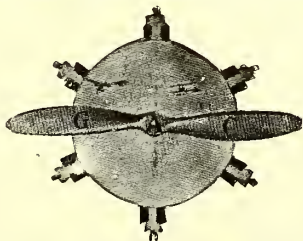
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When the British officer emerged below the clouds he could see no sign of the other. He therefore climbed up to an altitude of some 7,000 feet, and came to the conclusion that the German must have come to earth in the French lines.

French airmen, too, have been very successful during the last three days, having dropped several bombs amongst some German cavalry and caused considerable loss and disorder, and having by similar means silenced a battery of field howitzers. The German anti-aircraft guns have recently been unusually active. From their rate of fire they seem to be nearly automatic, but so far they have not had much effect in reducing the air reconnaissances carried out by us.

The note about rifles fixed on either side of the machine so that they can be used by a pilot single-handed is of interest. It suggests that they are aimed by steering the machine, much as the famous Judson in Mr. Kipling's story aimed the one big gun of his flat-iron gun-boat, "by wearing ship to suit." A 45-shot Lewis automatic seems to have advantages in this respect. One would like to see how the fixing was arranged to clear the tractor-screw. The Otto biplane to which reference is made is a "pusher," much like the Ago illustrated recently. One regrets to see the distinguished "Eye-witness" descending to "Mailese" and using that abominable verb, "to volplane." Perhaps some reader of THE AEROPLANE with R.F.C. Headquarters will be good enough to draw his attention to the matter.

* * *

The following passage from a further report by an eye-witness, issued by the Press on October 17th, deals with aircraft:—

It has already been mentioned that, according to information obtained from the enemy, 15 Germans were killed by a bomb dropped upon an ammunition wagon of a cavalry column. It was thought at the time that this might have been the work of one of our airmen, who reported that he had dropped a hand-grenade on a convoy and had then got a bird's-eye view of the finest firework display that he had ever seen.

From the corroborative evidence of the locality it now appears that this was the case, and that the grenade thrown by him must probably have been the cause of the destruction of a small convoy carrying field-gun and howitzer ammunition, which has now been found, a total wreck, on a road passing through the Forêt de Retz, north-east of Villers Cotterets. Along the road lie 14 motor-lorries which are no more than skeletons of twisted iron, bolts, and odd fragments. Everything inflammable on the wagons has been burnt, as have the stripped trees—some with trunks split—on either side of the road. Of the drivers nothing now remains except some tattered boots and charred scraps of clothing, while the ground within a radius of 50 yards of the wagons is littered with pieces of iron, the split brass cases of cartridges which have exploded, and some field-gun ammunition with live shell which has not done so.

It is possible to reconstruct the incident if it was in fact brought about as supposed. The grenade must have detonated on the leading lorry on one side of the road, and caused the cartridges carried by it to explode. The three vehicles immediately in rear must then have been set on fire, with a similar result. Behind these are groups of four and two vehicles, so jammed together as to suggest that they must have collided in a desperate attempt to stop. On the other side of the road, almost level with the leading wagon, are four more which were probably fired by the explosion of the first. If this appalling destruction was due to one hand-grenade, and there is a considerable amount of presumptive evidence to show that this was the case, it is an illustration of the potentialities of a small amount of high explosive detonated in the right spot; whilst the nature of the place where it occurred—a narrow forest road, between high trees—is a testimony to the skill of the airman.

It is only fair to add that some of the French newspapers claim that this damage to the enemy was caused by the action of some of their dragoons.

* * *

The following passage in the dispatch from Sir John French, dated September 17th, deals with aircraft:—

About September 3rd the enemy appears to have changed his plans and to have determined to stop his advance south direct upon Paris; for on September 4th air reconnaissances showed that his main columns were moving in a south-easterly direction generally east of a line drawn through Nanteuil and Lizy on the Ourcq.

* * *

The following passages in Sir John French's dispatch, dated October 8th, mention the good work done by the Royal Flying Corps:—

Sir David Henderson and the Royal Flying Corps under his command have again proved their incalculable value. Great strides have been made in the development of the use of aircraft in the tactical sphere by establishing effective communication between aircraft and units in action.

It is difficult to describe adequately and accurately the great strain to which officers and men were subjected almost every hour of the day and night throughout this battle.

In my dispatch of September 7th I mentioned the name of Brigadier-General Sir David Henderson and his valuable work in command of the Royal Flying Corps; and I have once more to express my deep appreciation of the help he has since rendered me.

* * *

The following officers and N.C.O.s of the Royal Flying Corps are mentioned in Sir John French's dispatch of October 8th:—

ROYAL FLYING CORPS.

Lieutenant K. P. Atkinson, Royal Field Artillery.

Captain R. A. Boger, Royal Engineers.

Lieutenant I. M. Bonham-Carter, Northumberland Fusiliers.



(Photograph by F. N. Birkett, Shenherd's Bush.)
N.C.Os. and Men of one of the new squadrons R.F.C. Military Wing, now being formed at Brooklands.

Captain V. J. D. Bourke, Oxford and Bucks Light Infantry.
 Captain A. B. Burdett, York and Lancaster Regiment.
 Brevet Major C. J. Burke, Royal Irish Regiment.
 Lieutenant (temporary Captain) G. I. Carmichael, R.F.A.
 Lieutenant A. Christie, Royal Field Artillery.
 Lieutenant E. L. Conran, 2nd County of London Yeomanry.
 Captain G. W. P. Dawes, Royal Berkshire Regiment.
 Lieutenant L. Dawes, Middlesex Regiment.
 Captain E. W. Furse, Royal Field Artillery.
 Captain H. C. Jackson, Bedford Regiment.
 Lieutenant P. B. Joubert de la Ferté, Royal Field Artillery.
 Lieutenant D. S. Lewis, Royal Engineers.
 Brevet Major C. A. H. Longcroft, Welsh Regiment.
 Lieutenant Mapplebeck, Royal Flying Corps.
 Lieutenant W. G. S. Mitchell, Highland Light Infantry.
 Lieutenant M. W. Noel, Liverpool Regiment.
 Lieutenant C. E. C. Rabagliati, Yorkshire Light Infantry.
 Brevet Major G. R. Raleigh, Essex Regiment.
 Brevet Major J. M. Salmond, Royal Lancaster Regiment.
 Lieutenant R. G. D. Small, Leinster Regiment.
 Lieutenant (temporary Captain) A. H. L. Soames, 3rd Hussars.
 Second Lieutenant N. C. Spratt, Royal Flying Corps (S.R.).
 Brevet Major (temporary Lieutenant-Colonel) F. H. Sykes.
 Captain F. F. Waldron, 10th Hussars.
 Second Lieutenant C. W. Wilson, Royal Flying Corps (S.R.).
 No. 18, Flight-Sergeant C. Cullen, Royal Flying Corps.
 No. 25, Flight-Sergeant H. Goodchild, Royal Flying Corps.
 No. 30, Sergeant W. Jones, Royal Flying Corps.
 No. 346, Sergeant M. Keegan, Royal Flying Corps.
 No. 775, Corporal S. Kemp, Royal Flying Corps.
 No. 808, Sergeant-Major E. J. Parker, Royal Flying Corps.
 No. 3, Sergeant-Major J. Ramsay, Royal Flying Corps.
 No. 816, Flight-Sergeant A. M. Saywood, Royal Flying Corps.
 No. 151, Sergeant A. Wilson, Royal Flying Corps.

* * *

It is announced from Paris that Lieut. Mapplebeck is in the Astoria Hospital, and that Lieut. Moutray Read is in the American Ambulance Hospital. Friends may like to write to them there.

* * *

An officer attached to the Intelligence Corps writes to a relative as follows:—"I have just seen four cars full of aviators go past here. They are wonderful fellows and have done some very important work. I have seen a duel in the air, the aeroplanes diving under and over each other like hawks, but they could not kill each other. I have seen two German biplanes brought down by our guns; they turned loops as they fell, and the pilots are always killed. We have just got two new machines with 160-h.p. Gnome engines, and they can go! It is very interesting to watch scouting. Directly a machine gets over the German lines they all fire at it. I counted one day over one hundred shells burst round one and never touch it. I have had one burst quite close to me without touching me; they are absolutely rotten. The most interesting thing our aeroplanes do is directing gunfire. If we are being shelled, one goes up and finds where their gun-pits are and drops a coloured light with a tail like a rocket to show us where to fire. They try to do the same thing with us, but they get a rotten time. We have got an aeroplane-gun like a pom-pom."

* * *

Among the contributions sent in for the Royal Flying Corps Aid Fund is a cheque for a guinea collected by "Vickie" in Newport, Mon. "Vickie" is a fox-terrier, the property of Mr. R. B. Martyn, of the Wiltshire Regiment and No. 2 Squadron, R.F.C. She was quite a popular personality with the squadron, and though not permitted to go on active service, has evidently been doing good work since her master went abroad.

FRANCE.

One regrets to learn that M. Verrier has been wounded, and all will wish our merry friend an early recovery. In the following letter to Mr. Holt Thomas, of the Aircraft Mfg. Co., Ltd., M. Verrier relates his experiences in his usual cheery way:—

"Dear Mr. Thomas,—I am happy to be able to give you my news. I was wounded on the 30th September at the battle of the Somme. I was doing a reconnaissance flight above — with an officer. We were flying very low on account of a

cloud at about 3,600 feet. My passenger was throwing bombs on the German infantry and I turned to see the result. At that moment my passenger received a bullet through the map which he was holding in his hand and a second bullet hit him in the foot. The third bullet was for me. It entered at my ankle and went out above the calf. I was 18 kilometres from headquarters where I had to put in my report. I lost a good deal of blood but got back all the same, piloting only with my uninjured foot. As a matter of fact I only just got back in time and was immediately transported with my passenger to the hospital at —.

"I have been made a sergeant, named for the Ordre des Armées, and proposed for the Military medal. I hope to be all right again in about a month and fit to recommence flying. I learn at this moment that the Germans are approaching this town and that I shall probably have to be carried somewhere else. I am very glad to have met some military British pilots that I know who have been to see me at the hospital. We have no news of Chevillard, who was taken prisoner about six weeks ago. I have flown since the 6th of August three to six hours per day."

All doubt about M. Louis Noel is set at rest, firstly, by a postcard from a mutual friend, dated October 11th, in which he says, "Noel is fine and distinguishing himself greatly. He got no medal for his recent flight, but was mentioned in orders, which is the next best thing"; and, secondly, by a card from M. Noel himself, dated October 13th, in which he confirms the fact that, like the late Mark Twain, the reports of his death are greatly exaggerated.

A further postcard from M. Noel, dated October 14th, says: "Mon cher Ami,—When we can't fly we go to the trenches next to X — and take part in the engagements. Going up on the hills we must be very careful and for a long way we walk almost on our knees. We bring tobacco and newspapers to our soldiers. They are all very well and their food is excellent. Generally, we spend some hours with them before leaving them. I am very happy to take part in two engagements. The dirty beasts use dum-dum balls, you can hear them whistling next to your head. The other day two shells fell next to us, wounding several soldiers. Capt. Watt was with me. Good-bye, old chap. Yours, LOUIS."

A telegraphic agency reports that when President Poincaré was visiting General Joffre at Romilly-sur-Seine a German aeroplane dropped a bomb into the town. As a result of the wonderful German spy system, news of the President's approaching visit reached the enemy's lines, and one of the best pilots was sent out to endeavour to drop a bomb on M. Poincaré and the Generalissimo. A French aviator, named Frantz, immediately gave pursuit, and succeeded in bringing down the German. President Poincaré rewarded him by pinning the Cross of the Legion of Honour on his tunic.

The fine performance of M. Frantz was noted last week, but its connection with the President's visit seems a trifle too much like the usual news agency romance.

The "Temps" of October 15th says that among the messages dropped from the clouds by a German aeroplane on Monday, October 12th, was a letter addressed to General Gallieni, the military governor of Paris, giving good news of several French officers captured by the Germans. The message also apologised for the dropping of bombs and remarked that "war is war." It is reported that the message was signed "Steffen," and made a reference to a visit to Paris before the war. If so, it is probable that the pilot was Stoeffler, the Alsatian sportsman, who put up several world's records early this year on an Aviatik. The courtesy of the aviator seems more Alsatian than Prussian.

The "Petit Parisien" states that a Taube threw bombs on Nancy Railway Station on October 13th, destroying several cars and telegraph wires, and wounding three employees. The aviator also dropped a proclamation to the effect that Nancy would soon be in German hands.

The "Times" correspondent at Nancy adds:—"The aviators were men of humour. Besides the bombs they dropped a flag and a note. The note said that 'Nancy' would soon become a German town and would be destroyed by a hail of mitrailleuse bullets and by fire. Fastened to the flag was a second note, rather more explicit in its terms, which I had the pleasure of reading. It ran as follows:—"We bid good-day to the in-

habitants of Nancy, who will soon be Germans, and we apologise for this rather eccentric method of introduction by means of powder, but we shall soon become better acquainted. Signed, Lieutenants Wimmer and Schneider, Aviation Officers of Strassburg."

Two German aeroplanes appeared over Dunkirk on Thursday, October 15th, and dropped a few bombs without result. The first dropped two near the village of Petite Synthe, to the west of the town, probably in the attempt to destroy the railway between Dunkirk and Calais. A fusillade from the troops in the town brought it down, and its pilot was taken prisoner. The second which appeared later dropped one bomb near Capelle, to the east, and made good its escape.

The "Morning Post" correspondent in Paris reports:—

"Various measures have been taken to put an end to the German aeroplane raids over Paris. Special squadrons are in waiting to pursue the Taube or Aviatik that is bold enough to show itself, and their aeroplanes are piloted by some of the best known French aviators. Early this morning (October 13) a Taube was signalled not far from Paris, but before it reached the suburbs it was chased away by a French squadron. The weather to-day has not been favourable for flying, but none the less Paris has been continually patrolled by French aeroplanes of various types. At first the public was inclined to take them for German machines, and consequently to waste its time by gazing up at them in the hope of seeing a bomb fall. Soon, however, it was discovered that they formed the city guard, and interest in them rapidly decreased.

[Congratulatory to the "Post" man on having discovered another German type of aeroplane besides the "Taube." But why assume that a biplane is necessarily an Aviatik? It might be an Albatros, or a D.F.W., or any one of a dozen others.—Ed.]

GERMANY.

The "Frankfurter Zeitung" of Tuesday last week (October 13th), says:—"Yesterday evening a French aeroplane was seen above the town of Karlsruhe at a moderate height, coming from the south. It was probably the same machine as the one seen above the airship shed at Baden-Baden, and was there fired at without result. The aeroplane was also fired at by guards at Karlsruhe, but escaped undamaged in a northerly direction."

[There are Zeppelin sheds at Baden and Karlsruhe, so we may expect a repetition of the Düsseldorf incident in due course. Other German reports say that the machine was probably English—which shows the Germans are beginning to take our aeroplanes seriously. Ed.]

A correspondent of the "Evening News" just returned from Berlin, writes as follows of a visit to Potsdam:—"I was losing all hope of being able to see something of interest when the noise of a powerful engine made me look over my head. A gigantic Zeppelin was performing different evolutions, dropping and rising again hundreds of feet, changing the direction, and pointing a massive nose now to the earth, now to the sky. I can see from the stability planes and from the shape of the tail that it is one of the very latest models; also a sort of silvery paint, probably the aluminium varnish which has been in use for years in the Italian aerial fleet, has been adopted instead of the old grey or copal varnish. I easily managed to find out that this is the first test of a new machine, that two airships exactly alike are being now equipped in the flying grounds of the west side of the town, and that old Count Zeppelin himself is looking after the operations.

"I can see in the distance the gigantic hangars erected for the purpose. The new Zeppelin seems very agile, considering its huge volume. The cigar-like shape seems to me to be thicker than the old model, and the distance between the gondolas carrying the engines and the body of the airship has been very much reduced. A kind old lady lends me her good field-glasses, and I can see that the crew is over a dozen people, and that a general in uniform is on board. The new airship does not, for the moment, show any number or mark of any kind. After a few more evolutions the Zeppelin disappears, concealed by the trees of the Brauhausberg."

[One may assume that the "new" Zeppelin is the "Sachsen" which went into dock at Potsdam to be rebuilt some six

months or more ago, as was duly noted in THE AEROPLANE at the time. It is quite time she made her reappearance. The "new" sheds at Potsdam were built about a year ago, and the two ships now being built there were ordered before the "Sachsen" went into dock. All these facts were properly chronicled in this paper at the time, so it does not seem that any surprise is being sprung on us.—Ed.]

The following note from the "Telegraph" must be singularly pleasing to the R.N.A.S.:—

It is interesting to learn on the best possible authority what a commotion was caused by the visit of a British airman to Düsseldorf. The General in command there, Baron von Bissing, issued on Friday a very long communiqué which says that the British bomb "produced in certain circles of the population a feeling which is not in accord with the energetic and vigorous character of the German people." The General says that he received a large number of letters, some of them anonymous, criticising the authorities for their lack of vigilance, and offering suggestions for the prevention of such "incidents" in future. He complains that his critics do not seem to know much about the matter and about "the difficulties." He says that there was no lack of vigilance, that the arrival of the airman was duly reported, and that "he was received with a heavy fire from rifles and machine guns, which, however, had insufficient effect, as apparently the aeroplane was armoured." Many mis-shapen bullets were picked up. A special gun for firing at aircraft fired several shots, but the loading apparatus broke down. There were no other guns available, "as the very numerous guns of this kind had naturally gone to the front, where they are still more necessary than at home." The General says that people in Germany "have been to some extent spoilt by the successes of the German armies, so that many of them suffer nerve shock when the enemy obtains some slight success anywhere in Germany." After the "accident" the inspector of the German Flying Service visited the airship shed, and expressed his "complete satisfaction" at the precautions taken, and at "the behaviour of the brave Landsturm men." The General himself praises the newspapers for not having shown "the same excitement and nervousness as the great part of the people of Düsseldorf."

[If one or two little bombs cause such a sensation, what will be the state of the German mind when we start work in earnest?—Ed.]

BELGIUM

A German aviator flew over Bruges on Wednesday, 14th, and dropped two bombs on the barracks, but without doing any damage.

At 9 a.m. on the 14th a German flying machine dropped two bombs on Ostend. They fell on the sand dunes, but did not explode. They were afterwards picked up by an engineer. Shortly after 1 o'clock another aeroplane which passed over Ostend was fired upon by guns. It did not drop any bomb, but disappeared, and was immediately chased by a British aeroplane.

Mr. Martin Donohoe gives in the "Chronicle" the following account of an affair in Belgium:—

"In the engagement in the neighbourhood of — the Germans employed two of their aeroplanes. Two airmen who had gone up from a certain point of the Belgian coast early in the morning with the object of reconnoitring the position of the enemy suspected to be concentrating in the neighbourhood of this part of the French frontier sighted the enemies' aeroplanes and gave chase. The Taube on sighting the aeroplanes turned back from the coast and made inland, no doubt for the shelter of their own lines. The two aviators gave chase, and they were subsequently joined by a French biplane.

"The Allied airmen promptly continued the pursuit until they drew upon themselves the fire of the enemy. Artillery and machine guns were directed upon them, and they escaped injury. This incautious display on the part of the Germans was of value to our aerial scouts, for it enabled them to observe the positions and the strength of the enemy."

In confirmation of the remarks in this paper last week as to the exaggeration in reports of Zeppelins over Belgium, and

also as to the danger of star-gazing when an aerial action is being fought, the following passages from the report of the "Times" correspondent at Rotterdam, October 15th, are worthy of note :—

"I see that the people of London have been officially warned that, in case of a visit from hostile aircraft, there is danger from fragments of the projectiles which may be fired at it. It is a necessary warning.

"In the case of the attack by a Taube aeroplane in Antwerp five days before the actual bombardment of the city, I reported in my message to the 'Times' that it 'dropped bombs harmlessly'; which was true. From other sources reports were published, and widely republished, that the bombs caused the wounding of two persons and the death of a third. These casualties did occur; but there is no doubt that they were caused by pieces of the shells fired at the aeroplane by the Belgian guns.

"A similar misunderstanding exists in regard to the aircraft which have made attacks on various towns. Who invented the story, which seems to have been universally accepted, that six Zeppelins took part in the bombardment of Antwerp I do not know. There was, I feel sure, no Zeppelin there. The story is pure imagination. The only hostile aircraft which visited Antwerp during the final ten days were occasional Taube aeroplanes, and, with the exception of the instance already mentioned, I do not believe that any of them dropped bombs.

"The only raids made by Zeppelins in Belgium during the last month I believe to have been that on Ostend and, immediately following, that on Deynze and Thielt, both of which I described to you at the time."

[One may add that quite possibly this Zeppelin was destroyed by Flight-Lieut. Marix at Dusseldorf.—Ed.]

RUSSIA.

"Reuter" reports that a Cossack patrol concealed in a wood near Warsaw has brought down a Zeppelin, which was flying fairly low. The crew of the Zeppelin were unhurt, and the Zeppelin itself was taken intact to Warsaw. This may refer to any kind of aircraft from a Parseval-Siegsfeld upwards. News agency reports are notoriously unreliable.

ITALY.

The news that a bomb had been thrown by the Germans on the roof of Notre Dame has caused a sense of horror in Rome, especially at the Vatican, where the Pope is reported to have exclaimed, "Providence has prevented an outrage which would have shocked the world."—[This is only one of Reuter's stories, and there is no reason to believe that His Holiness perpetrated such a banality as the remark attributed to him. If Providence was going to worry about Notre Dame, something might have been done for Reims and Malines and Louvain, and a few dozen other of His houses. The idea reminds one of the small boy who asked: "Daddy! Did God make little flies

too?" "Yes! of course, dear," said Daddy. On which the young philosopher remarked sententiously, "Fiddling work, making flies!"—Ed.]

AUSTRIA.

"Reuter" reports that an Austrian hydro-aeroplane, which had on several occasions thrown bombs over Antivari, having flown on October 12th over Mount Lovtchen, was struck in the right plane by a shot from a 65-mm. gun, and fell into the sea, where it was picked up by a torpedo-boat, which came to the rescue from the Bocche di Cattaro. If a 65 mm. (nearly 3-inch) shell hit the wing of a seaplane, it is hardly likely there would be much left to pick up.

CHINA.

An official statement from Tokyo, dated October 16th, says that on October 14th a section of the naval squadron outside Tsingtau destroyed portions of the Ilits and Kaiser forts. Simultaneously aeroplanes dropped bombs.

From Peking on October 15th it was reported that five aeroplanes belonging to the Allies have engaged in a pursuit of some of the enemy's aeroplanes, which owe their escape to the clouds which obscured them. One does not know of any British aeroplanes in the Far East, so these were presumably Japanese, though there may be some French machines from Cochin China.

The Sussex County Aero Club.

The committee have invited all the officers of "Kitchener's Army" at Shoreham Camp to become members of the Club whilst resident here. The officers desire to thank the members both for this and for their response to the request for contributions to the prize fund for recruits' sports which have been received from the following:—D. R. Sassoon, Esq., £15 15s.; Col. and Mrs. Carrington, £2 2s.; R. W. Harrison, Esq., £2 2s.; E. H. M. Denny, Esq., £1; J. Paterson, Esq., £1 1s.; H. E. Wilson, Esq., £1 1s.; W. P. Birch, Esq., 15s.—Total, £23 16s.

Subscriptions are also being invited from non-members, as this detachment of the Army consists of 20,000 men.

The first of these sports was held successfully on Sunday, October 11th, and was largely attended. Entries close on 1,000. The committee furthermore desire, if possible, to add to the officers' comfort by establishing a library, and invite members of the Club to send them such books from their homes as they can conveniently spare. The Club will pay the carriage.

The second sports day given for the 72nd Brigade was again a great success, and was held in beautiful weather. At the conclusion of the sports Messrs. Pashley Bros. and Hale gave some flying exhibitions and did much passenger-carrying.

On Sunday next the 73rd Brigade hold their sports, commencing at 2.30 p.m. The work entailed is very heavy, and the loan by members of their cars would be acceptable.



ADMIRALTY SUPPLIES.—A load of Cellon Dope for R.N.A.S. repairs.

THE INDUSTRY AT WEYBRIDGE.

Quite a number of readers of *THE AEROPLANE* have asked of late how it is that one sees nothing in print of doings at Brooklands. The reason is that the Brooklands Aerodrome is now under military control. It is being used as a training-ground for the young gentlemen who have been so fortunate as to obtain direct appointment, on probation, to the R.F.C., and as a practice-ground for more experienced fliers. The former are there undergoing the preliminary or box-kite stage of aviation, for it appears that the Army has managed to secure a further supply of box-kites, and still believes in the utility instead of the futility of that type.

Instruction is being given by various officers and by Mr. Stutt, the Australian pilot who was until recently with the Bristol Company. After having passed the certificate stage these same officers are further instructed on Maurice Farmans, or Blériots, and on various tractor biplanes, such as the Avro and B.E.; but, being a purely military school, no reports of the progress of pupils are issued. One can, however, say that even since the outbreak of war quite a number of remarkably fine fliers have been produced, and the new pilots sent to the front will be quite worthy to take their places alongside those who have already won the admiration of every army in the world, including the German.

A casual member of the public passing along the road by Brooklands may see almost at any time exhibitions on Maurice Farmans which would lead him to believe that M. Noel or M. Verrier had returned to England for a holiday. Mr. Stutt, the instructor, in particular, now that he has a real aeroplane to fly, is showing himself quite equal to either of these pilots on a Maurice Farman, and some of his pupils are rapidly approaching to the same degree of skill.

Besides the military pilots, the only other flying is done by the various civilian pilots testing new type machines turned out by the Sopwith Company and the Martin-Handasyde firm. The Blériots, which are being built absolutely to standard pattern, are being taken over direct and are being tested by an officer of the R.F.C., generally Mr. Leveson-Gower, who was formerly with the Blériot firm.

The New Martinsyde.

In the course of a visit to Brooklands the other day one saw quite as much flying as one used to see at Hendon in its most palmy days, and one could not help being particularly struck by the new Martinsyde scout. This little machine is on the familiar scout lines, with a dumpy fuselage and a bull nose. Its speed is probably well over 85 miles an hour, and it lands quite slowly, though, being somewhat heavier than most machines of its type, it is perhaps a trifle faster in landing than some of its predecessors. It is, however, claimed as a set-off against this that when it gets onto the ground it stays there instead of gliding interminably.

The workmanship throughout is of peculiarly high quality, and the obvious strength of the detail work should give pilots the greatest confidence in it. Anyone who has inspected the machines under construction and has seen the first of the type flying will not be surprised to hear that a number have been ordered by the Government, and that the Martinsyde staff has been multiplied many times over and is still too small.

Blériot Workmanship.

At the Blériot works great progress is shown, and the quality of the work turned out under the supervision of the works manager, Mr. Davidson, is very high indeed. A close inspection of a number of wings before they were covered convinced one that they are superior in workmanship to the French-built wings, and as nothing but English ash is used in the spars they are probably superior also in strength. The care taken in varnishing the woodwork before covering the wings should increase the durability very greatly, and all such small details as the fixing of the cane strips on top of the fabric, and the fastening of the distance-pieces between ribs, are most carefully carried out. In addition to making complete new machines at a very rapid rate, a big supply of spare wings, rudders, elevators, and spare parts generally are being produced, all of the same high quality. The superficial finish of the machines is quite up to the best French level, and Mr.

Chéreau, the manager of the firm, is to be congratulated on the progress the works have made in the short time since they were established.

Sopwith "Pushers" and New "Scouts."

At the Sopwith sheds also there is considerable activity, as new land-going machines for the Navy are constantly being tested. On the occasion of this particular visit Mr. Hawker was out on a new Sopwith "pusher" with a Sunbeam engine, taking the officer commanding one of the Naval Air Stations as passenger. The machine was obviously exceedingly fast for one of its type and seemed to fly well with the load it was carrying. One gathers that a more powerful engine is to be fitted, and it is obvious that then the machine will be able to lift weights which will make it a very valuable weapon. In many respects it is similar to the seaplanes supplied to the Greek navy, on one of which Rear-Admiral Mark Kerr, R.N., took his certificate recently. The Sopwith Company is, at present, concentrating its energies chiefly on producing seaplanes, so their machines are not so frequently seen at Brooklands as they used to be.

However, Sopwiths are likely to be seen in greater quantities at Hendon, for the R.N.A.S. has taken a great fancy to the firm's "scouts," which is not surprising considering that two "scouts" scored in the second raid into Germany, and that Squadron-Commander Grey and Flight-Lieut. Collet both flew Sopwiths in the first raid. The latest "scout," built for the Gordon-Bennett Race, does 105 miles an hour with an 80-h.p. Gnome, and she is "slow" compared with the 100-h.p. machine, so they and their successors now on order should be vastly discomfiting to any German aircraft which come our way.

The Small Perry Beadle.

On this same day a very interesting performance was put up by Mr. Dukinfield-Jones, who took out the little Perry-Beadle tractor for its first test after being rebuilt since it was smashed up by another pilot, and its behaviour showed how great a loss the aeroplane industry suffered by the death of Mr. Copland Perry. Though fitted only with a 45-h.p. Anzani, the speed of the little machine was well over 60 miles an hour, some good judges putting it as high as 65.

It gets off with an astonishingly short run and lands very nicely, and Mr. Jones says that it is one of the most comfortable machines he has ever flown. One would suggest that the type is worth reproducing as a machine on which pupils who have passed their certificate tests can obtain further training without taking the risk of smashing bigger and more expensive machines. Certainly it appears to be the most efficient tractor biplane of its power yet produced.

Mr. Dukinfield-Jones Moves.

This was probably Mr. Jones' last appearance at Brooklands for some time, as one hears that he has joined Beardmore's, of Glasgow, who are to produce standard type biplanes in large quantities, and that he will have the testing of these machines as they come through. Mr. Jones has developed into a pilot of quite the first class and is a distinct credit to his instructor, Mr. Melly, of Liverpool, who seems to have the knack of turning out really good pilots.

Lang Propellers.

While in the Weybridge district the writer took the opportunity of paying a visit to the Lang Propeller Works. Here, as in all other works connected with the aeroplane industry, the greatest activity prevails. The staff has been increased many times over, and every building on the island where the works are situated has been taken over. These are all boat-building shops and are therefore particularly well suited to this class of work. Despite the necessity of putting on a number of new hands who are unused to the delicate operations of propeller-making, Mr. Lang has succeeded in keeping the quality of his work as good as ever, and one hears very high opinions of the propellers of his design, as well as of the staunchness of those built by him to other designs.

Among the interesting propellers to be seen in the works were a couple of enormous four-bladed for airship work, these being 15 feet in diameter. They are built as actual four-bladed propellers in the same way as those used on the B.E. biplanes, and are not two-bladed propellers fixed at right-angles

to one another, and consequently the amount of work involved in making them absolutely accurate is very great, in addition to which the responsibility of the men engaged in producing them is fairly heavy, because one false stroke of a tool when the propeller is approaching completion would probably do more damage than the man's wages would pay for in months.

Already the present workshop accommodation is too small, and a new workshop has been taken in the town of Weybridge, so that the output of the Lang Company will soon be materially increased. The rise of this firm within the last two years is quite remarkable, for it was only a little over two years ago that Mr. Dashwood Lang began hewing experimental propellers out of solid lumps of timber with his own hands. Be it said, incidentally, there are very few people in this country who are more expert in woodwork than Mr. Lang, for some of the wood-carving done for his own amusement in the past reminds one of the mediæval works of art which people go miles to see when they happen to form part of a screen in a church, instead of being put to some domestic use. One is glad to see that Mr. Lang's skill, ingenuity and pertinacity are now meeting their merited reward.

ACCELERATED AIRCRAFT PRODUCTION— III.

A week or so ago I was fortunate enough to have the opportunity of going through the new works of Messrs. A. V. Roe and Co., Ltd., at Miles Platting, Manchester. The works are situated in a district more noted for its manufactures than for its beauty. Here I was welcomed by Mr. H. V. Roe, who assigned me to the tender mercies of a guide.

We started our tour in the wood-working shop, where is the latest electrically driven machinery for the minimising of labour. Besides the usual woodwork for the aeroplanes, several floats were in the making for seaplanes. These are beautifully made, consisting of wooden framework covered with three-ply wood, made watertight by strips of canvas and marine glue, the whole being then covered with fabric, glued and painted. These floats are remarkably strong, and very light for their strength.

The planes are also made here, and the workmanship of these, coupled with the perfect quality of the wood used, explains why so few fatalities have occurred on Avro machines, compared with other makes which do less work and are more talked about by the lay Press.

From this shop we go to the polishing-room, which seems a haven of quiet after the din of the workshop. Each wood part as it is finished comes here to be polished. The work is done well enough to make any pianoforte-maker envious.

From the quiet of the polishing-shop we ascend to a Bedlam of noise, the metal-working department. Never had I imagined that the aeroplane industry could boast of so huge and perfectly equipped a workshop. The machinery is thoroughly up to date and the variety of the work enormous. Here in one corner one's eyes are dazzled by the flame of the oxy-acetylene welding plant, and with the safeguard of blue spectacles one can see welding done by a past-master of the art. In another part of the shop the unique spring chassis slides are being made, along with hundreds of smaller metal parts, such as lugs, etc. Only on going through a works of this description does the magnitude of detail in an aeroplane reveal itself. You can see small unconsidered parts being made, such as the thin sheets of aluminium which prevent the pilot stepping through the planes; the discs for the wheels and the elevator and aileron levers are all made here with the care which is the watchword of the company.

From the clang of steel we go to the slightly lesser clang of tin, the tinsmiths' shop. Here we see petrol-tanks and engine cowls taking shape from crude sheets of metal. One speciality here is the unique petrol-tank and seat combined. The tank, which is of large capacity, is oblong in form and fits across the fuselage. The forward side is recessed in the shape of a seat, in which recess is fitted comfortable upholstery for the occupant.

Now we go into the enamelling shop, where, in an atmosphere suggesting the worst Hades that ever Salvation Army officer threatened, every metal part is beautifully stove-enamelled in a way which puts most cycle factories to shame. Thence we go into a large, cool and light room where skilled hands are cover-

ing planes. The finished planes are as tight as a drum before being "doped," so perfectly is the covering done.

Now to the place where all the parts which make the aeroplane are assembled, the erecting shop. This is a corrugated-iron extension of the works, as large as a skating-rink, which was erected owing to pressure of business. There were many machines on hand when I was there, in various stages of assembly. On all parts of every machine was the A.I.D. stamp as all A. V. Roe and Co.'s machines are at present for either the Army or the Admiralty. The "pusher" biplane shown at Olympia was here being remodelled and a small fin fitted fore of the rudder. Here also was the "Scout" in process of alterations. The planes are almost flat. "Hundred-mile-an-hour planes" the workmen call them. According to the foremen, there seems to be no dearth of Gnome engines. He told me that an engine ordered by telegram would be delivered in 48 hours, so there seems to be no fear of a famine.

As to tractor screws, A. V. Roe and Co. have manufactured their own since the dawn of aviation, and from the pains taken with them, the exhaustive tests they are put through before being finished, and also from the fact of each tractor being designed for its special type of machine, it is not surprising that the combination of Avro aeroplane and tractor has proved successful.

As to the personnel of the factory, although working extra hours and at high pressure, the staff, from directors to floor-sweepers, wear the smile of contentment. I can safely say that each man is an enthusiast in his own branch of work, and the men are proud of their firm to a degree, a quality all too seldom found in England. Several hundreds of men are employed by day, and I believe that a night staff of almost as many is at present engaged. The completeness of the works is astounding, the only things which the company do not seem to make being the tyres and fabric. It is good to see the Brothers Roe at last prospering as they deserve, for they fought a magnificent losing fight some four or five years ago and stuck with dogged tenacity to their aims to make the best of aerial vehicles; and they have succeeded in producing what they claim shall be recognised as the "Rolls-Royce" of aeroplanes.—

L. F.

[One would add to this writer's notes the fact that on active service the 80-h.p. Gnome-Avros have distinguished themselves very highly. They stand up to exposure to the weather as well as any aeroplane yet discovered. They are about ten miles an hour faster than the Renault-engined B.E.s, which have practically the same power. They land quite as slowly, they climb faster, and they are, if anything, easier to fly. At last Mr. A. V. Roe's genius seems to be coming into its own, and he thoroughly deserves his long-delayed success.—C. G. G.]

SCHOOLS AT WORK—I.

Any visitor to Hendon cannot fail to notice the activity which prevails at all the schools there, and one of the most active of late is the Caudron School, as may be seen from their school reports. Just prior to the outbreak of war there was a lull in the flow of pupils to the various schools, and also a good many machines had been broken up, and consequently for a period the Caudron School was not as active as it used to be. Of late, however, several new machines have been put into commission, and when the writer visited the school a week or so since, the stud then consisted of the 60-h.p. two-seater, the 45-h.p. brevet machine, and two 35-h.p. taxis, all of them with Anzani engines.

In the nature of things one or other of these machines is frequently laid up, but the others seem to provide quite an amount of practice for the rapidly increasing number of pupils, and the two instructors, Messrs. René Desoutter and Murray, appear to keep them hard at work. One gathers also that further school machines are under construction at the firm's works at Hendon, and that as fresh pupils join the school fresh machines will be put into commission.

Probably this paper, more than any other, has impressed on its readers the advantages of the Caudron type machine for tuition when the pupil wishes to learn in a single-seated machine, and these advantages have undoubtedly been appreciated, as is shown by the fact that a variety of other schools use Caudrons or machines of the Caudron type. A good many independent aviators have also invested in Caudrons or have

built Caudron type machines for themselves, notably Mr. George Wilson of Edinburgh, Mr. Bell of the Peebles Motor Co., Mr. N. S. Percival and Mr. Muller at Brooklands, Mr. Scott in New Zealand, and Mr. Prosser of Birmingham. Incidentally, Mr. Prosser is now located at Hendon and is flying in a style reminiscent of Mr. Goodden, except that he performs his evolutions a good deal closer to the ground, where, though they bear witness to his skill and show the wonderful controllability and inherent stability of the machine, they are occasionally somewhat embarrassing to pupils of the various schools, for it certainly must be somewhat nerve-shaking to a pupil, struggling bravely round on a box-kite, to see a Caudron apparently doing a terrible side-slip right over his head.

The stability of the Caudron when properly adjusted is undoubted, because one recollects a certain incident at Brooklands when Mr. Percival, who was not particularly well acquainted with the machine, disappeared suddenly, apparently in a vertical side-slip behind the trees beside the Byfleet road. Just when people were preparing to go round on cars to collect the pieces, Mr. Percival reappeared several hundreds of yards away, came back into the track, and landed after several more circuits. On being asked how he managed to recover himself from his apparently impossible position, he merely replied that he let go of everything and hung on to the struts on each side of the fuselage to wait for the bump, after which the machine righted itself and he again took control.

One may add that the Caudrons now being built are considerably better constructed and better finished than the original French products, and in the newer machines aluminium lugs and the old type eye-bolts are being replaced by steel sockets and proper wiring plates, so that although one cannot recollect any case of Caudron machines giving way in the air, the possibility is now reduced still further.

The performances of Mr. Goodden, M. Chanteloup and various naval aviators on the older type standard Caudrons are sufficient evidence of the machine's staunchness, and one hopes to see this type still more used, especially for school work, in the future, for it is obvious that a man who has learned to fly on a comparatively slow and low-powered tractor biplane will have much less trouble in getting used to the manners and customs of a high-speed tractor than one trained on an entirely different type of machine.—C. G. G.

Congratulations.

The marriage took place on Wednesday, October 14th, at Monmouth Beach, New Jersey, of Mr. James Cox Brady, son of the late Anthony N. Brady, to Lady Victoria Pery, daughter of the Earl of Limerick. Everyone will wish the pretty little lady every happiness in her new life, and will hope that she will insist on some of her husband's millions being devoted to the serious development of American aviation.

"MELLY.—October 17th, at 4, Oxford Drive, Waterloo, Liverpool, the wife of Henry G. Melly, of a daughter (both doing well)." Mr. Melly's persevering efforts to create an interest in aviation in the neighbourhood of Liverpool in the face of every kind of discouragement are appreciated by all who have followed aviation since its early days. All will wish his wife and daughter health and happiness.

The British Petroleum Company.

In reply to various erroneous statements circulated concerning the composition of the British Petroleum Company, Ltd., 22, Fenchurch Street, E.C., who are concerned with the distribution of the famous "Shell" motor spirit, the company write as follows:—"The European Petroleum Union, with whom we are associated as part of their organisation for the

production and distribution of petroleum products, is entirely international in character and embraces world-wide interests. Its actual capitalisation is half Russian and Belgian, and any withdrawal of support is a direct blow to our Allies in addition to injury to our own organisation and its staff of 3,000 men. We have been gratified to receive numerous letters from the trade expressing personal regret that the interested and therefore inaccurate statements made should have conveyed such a wrong impression, and promising an increased measure of support. We make a personal appeal that you will loyally support us in a fuller measure than in the past. By so doing you will confirm your disapproval of the interested statements and enjoy the satisfaction of knowing you are helping your Allies, including brave little Belgium.—(Signed) BRITISH PETROLEUM CO., LTD."

[Anyone who has even the slightest knowledge of the part played by "Shell" spirit in the work of the King's Forces by air, land, and sea will need little persuasion to act on the appeal in the above letter.—Ed.]

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Fair	Windy	Windy	Fair	Very Windy	Very Windy	Windy
South Coast	Fine	Fine	Fine	Fair to Windy	Windy	Windy	Windy
East Coast	Fine	Fine	Wind Rain	Windy	Windy	Windy	Wind Show
Southampton...	Rain	Dul	Rain	Dull	Fine	Fine	Fine

Eastbourne.—AT E.A.C. SCHOOL: Instructors: Messrs. F. B. Fowler and R. C. Hardstaff. Pupils with instructor: Flt.-Sub-Lieuts. Huskisson (69 mins.), and Iron (51 min.) 8's or circs alone: Flt.-Sub-Lieuts. Wright (27 mins.), Dawson (27), Nicholl (41), Petre (82), Huskisson. Certificates taken: Flt.-Sub-Lieuts. Wright, Dawson and Nicholl. Flt.-Sub-Lieut. Petre passed tests A. and B. Machines: E.A.C. biplanes.

Hendon.—AT GRAHAME-WHITE SCHOOL: Instructors: Messrs. Manton, Shepherd, Winter and Russell. Pupils with instructor: Flt.-Sub-Lieuts. Watson, Bray and Young (new pupils), Allen, England, Groves, Hodsell, Price, Ffield, Hart, and Messrs. Greenwood, Y. Y. Lui, Easter and Stalker. Straights alone: Flt.-Sub-Lieuts. Morgan, England and Allen, and Messrs. Easter and Carabajal. 8's or circs alone: Messrs. Carabajal, Easter, and Flt.-Sub-Lieuts. England, Riggall, and Morgan. Certificate taken: Flt.-Sub-Lieut. Riggall. Machines: Grahame-White biplanes.

AT THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. R. Desoutter and R. M. Murray. Pupils alone: Messrs. Barfield and Stevens, straight. Messrs. Beynon, Gunner and Sub-Lieuts. Tench and Bird, rolling. 8's or circs: Messrs. Christie and Ivermee. Machines: Three Caudron biplanes.

AT HALL FLYING SCHOOL.—Instructors: Messrs. J. L. Hall, Tankeston Parkes. Pupils alone: Mr. E. Brignildsen (8 strts), Mr. J. Rose (6 strts). Mr. J. Rose (3 circs), Mr. Brynildsen (2 circs). Machines: 2 Hall tractors, 1 Deperdussin. Mr. J. L. Hall did a long flight on brevet tractor at 1,000 ft., testing machine for Mr. J. Rose. New pupil, Mr. Lloyd Williams.

AT BEATTY SCHOOL.—Instructors: Messrs. Geo. W. Beatty and Roche-Kelly. Pupils at work: Messrs. Leong, Virgilio, Gardner, Aoyang, Parker, Whitehead, Jenkinson, Fletcher, Leeston-Smith, Beynon, Moore, Le Vey, Christie and Donald. Machines: Beatty-Wright dual-control biplanes.

Shoreham.—AT PASHLEY BROS. AND HALE SCHOOL: Instructors: Messrs. E. Pashley, F. Hale, and C. Pashley. Pupils with instructor: Messrs. J. Sibley and Menelas Babiotis. 8's or circs. alone: Messrs. C. Winchester and T. Cole. Machines: H. Farman and Pashley biplanes. Two tractor biplanes are to be added to the school shortly, the first next week.

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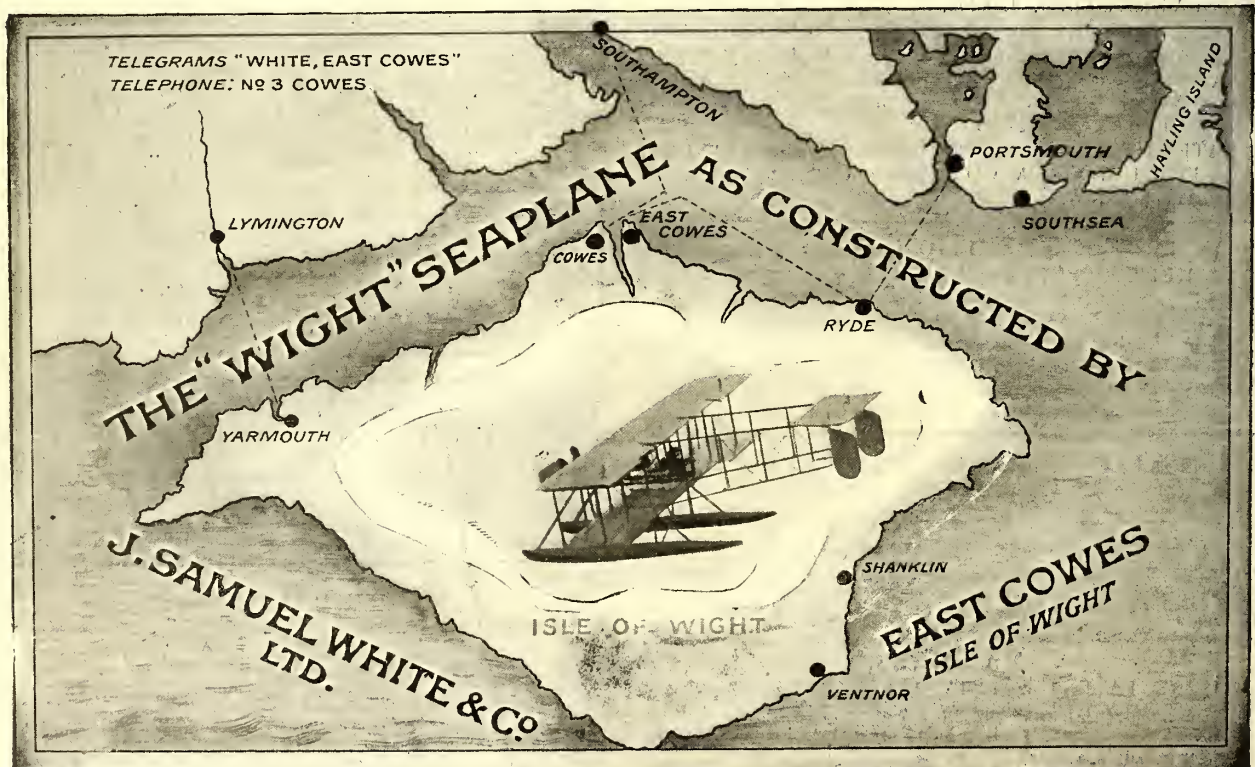
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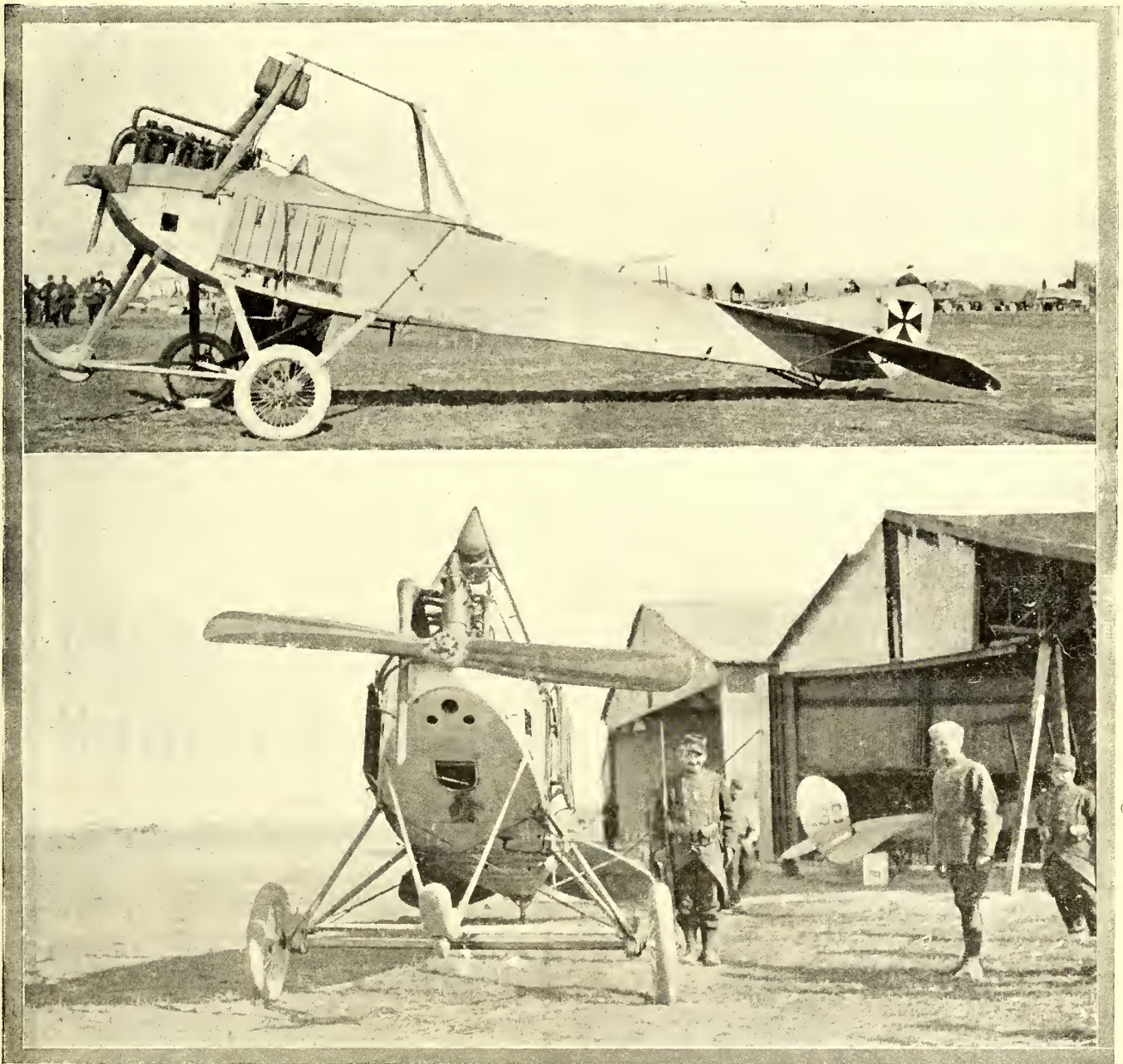
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O. AS A NEWSPAPER.]

WEDNESDAY, OCTOBER 28, 1914.

No. 18

A PRISONER OF WAR.



A German L.V.G. Biplane taken prisoner by the French, after being compelled to descend by a bullet striking the radiators and letting out the water therein. The machine was absolutely undamaged and the wings were merely taken off to facilitate transport. The German Cross on the tail is clearly shown.

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Lessons from Experience.

Straws show which way the wind blows, and casual remarks often put one on the track of important affairs. A remark in the official "Eye-witness's" report from Headquarters issued on October 24th, and dated October 17th, gives one furiously to think when taken in conjunction with other casual references to military aircraft which one comes across.

We have been told in the past that our military aviators have established a marked ascendancy over those of Germany and have obtained something approaching to the command of the air. Yet in this report we read that on October 15th, three of our aeroplanes gave chase to a German machine, but that unluckily the one machine of ours which was faster than the enemy's met with some slight accident and had to give up the chase. That in itself may simply mean that at the moment when the German appeared all the best machines from that particular point were out on reconnaissance, and that the one fast machine present had some slight engine trouble, but it may equally well indicate a very serious state of affairs and one which deserves the earnest attention of the Naval and Military authorities,—I mention both because so many of the Navy's land-going machines are operating on the Continent, and because in certain directions the Admiralty is following the War Office lead.

Early this year it became evident that German aeroplanes, which had previously been heavy and clumsy and badly built, were rapidly improving in their flying qualities, and those which came over here showed us that in many constructional points they excelled our own, even when they flew badly. In consequence, this paper gave very considerable attention to the doings of German aeroplanes, and one may claim without boasting that readers of THE AEROPLANE were better informed as to German progress in aviation than were any other people in this country. In season and out of season the growth of German aviation was impressed on our readers, especially in the matter of the personal and financial support given by the German Government to the sporting side of flying, which encouraged the production of better and better machines, and this was contrasted with the hostility of our own authorities to all aeronautical sport, except purely futile ballooning. Even record-breaking was not regarded favourably.

Though many of the younger officers of both Services would have been only too pleased to have competed in the big events—if they had been run by the right class of official, as they would have been if countenanced by the Admiralty and War Office—Service men were forbidden to compete, and the only encouragement any sporting event received was the Admiralty's offer of help from the Naval Air Stations to competitors in the Seaplane Circuit which was stopped by the War. In Germany the majority of the competitors in such events as the Prince Henry Circuit were commissioned officers.

German Official Encouragement.

This official encouragement led to German makers producing new types, and brought capital into the German industry when most needed. This abundance

of capital allowed the makers to spend money on improving the construction of their machines at a rate impossible in this country, and consequently really splendid flying machines were produced just before the War, as for instance the Albatros and Aviatiks on which all the long-distance records were broken. The big lumbering D.F.W., a clumsy flier but beautifully constructed—and still the holder of the British long-distance cross-country record—became the fast flying, quick climbing machine on which Schüler beat the German cross-country records and on which Oelerich beat the world's height record.

An Irish friend, who has long been concerned with aeroplanes, was touring in Germany six weeks or so before War broke out and sent me a glowing description of the L.V.G., which was duly published. Mr. Whittaker, returning from Germany after War was actually declared, confirmed in his important articles the high quality of the modern German aeroplane. It cannot, therefore, be said that our people were not warned of the excellence of our enemy's machines.

Are They Superior?

Only a week or two earlier than that the frontispiece of this paper bore the portraits of the four German world's record-breakers, labelled "Our Betters." Naturally, when a few weeks ago our Headquarters despatch mentioned that we had obtained something approaching the command of the air, various and sundry good friends did not fail to draw my attention—with appropriate remarks—to the disagreement between our frontispiece and the official view. Now we have the admission of our Headquarters that the German machine was our better, if only at running away. (Loud cheers from the cheaper parts of the house.)

Yes! But please remember that it is a scout's job to run away with the information he has obtained, which information includes a knowledge of where our aircraft are stationed and what kind of aircraft we are using. A scout is a species of burglar, and if a burglar can run faster than the local policeman he is an efficient man at his job. If the local policeman cannot catch him he is no use, and one might as well simply employ a night-watchman just to keep the burglar away from one particular point.

The Advent of New Enemies.

It may seem that I lay too much stress on this one incident, but it only confirms other points in a chain of evidence which leads to the conclusion that if we are not very careful, and if our authorities do not alter their policy, we may easily lose the command of the air which we have arrogated to ourselves thus early in the proceedings. What first put me onto this line of thought was a letter on the subject of identifying friendly and hostile aircraft. In it the writer, who is not in either Service nor connected with the aeroplane industry, said he had heard there was now greater difficulty than ever in identifying German aeroplanes, because of late they have been using machines which are very like our own.

This at once pointed to the use of the latest type tractor biplanes, such as the L.V.G., Albatros, and

Aviatik, which, as the recent photographs smuggled out of Germany by Mr. Whittaker, show, would be so much like B.E.s in plan view as to be almost indistinguishable to an untrained observer. True, the tail is different, and the B.E. has more rounded corners to the wings, but there is the same long projecting nose and unstaggered planes. Similarly the Ago tractor, with a Gernau Gnome, might easily be taken for a Sopwith or Avro.

In quite another quarter I learned from a remark as casual as that of the "Eye-witness" that some of the newer German machines climb more quickly than any except a few of ours, which seems very probable when one considers the various height records beaten on German machines within the past few months. This remark also confirmed the idea that the newer type German machines are now coming into use.

All this goes to show that our easily attained superiority in the air at the beginning of the War was due to the fact that our opponents were then drawn from the front air stations and were using the machines which they have had there for the last six, or twelve, or eighteen months. These would be the old type Taube monoplanes from the Rumpler firm, Aviatik biplanes from Mülhausen, and early type Albatros and L.V.G. biplanes, and Jeanniu monoplanes, all of them heavy and slow compared with the newer types of the same makes, and many of them using only four-cylinder engines of about 70 h.p., instead of the 100 h.p. six-cylinder engines of to-day.

Where We Can Score.

Now we are up against fresh supplies of the newest types which have been built since the War started, or were nearing completion when this show began, and our problem is to defeat them as certainly as we defeated their predecessors. Fortunately we have machines in this country capable of doing so, and our business is to secure large supplies of them as quickly as possible. The Sopwith scouts, beloved of the Navy now that stronger chassis are fitted to suit ordinary pilots, the Bristol scouts of the Barnwell-Busteed type, now with the R.F.C., the standard type 80-h.p. Avros which are standing up to active service use so well, despite their light appearance, and the new Martiusyde scouts, about the strongest aeroplanes yet produced, are all faster than any of the newer German aeroplanes. Also there are the revised versions of the S.E. type built by the Royal Aircraft Factory, which may now be safe to fly. I respectfully submit to the authorities that these are the types most needed at the moment.

No one can dispute the advantages of standardisation in military equipment, but there are times when a dozen crack shots armed with special match rifles may be worth a battalion of ordinary infantry using the standard small arm of any army. Similarly a hundred high-speed non-standard aeroplane destroyers may be worth ten times as many highly standardised machines. Also, which is very important, non-standardised aeroplanes will be far quicker to produce, especially when one considers that designers of our standardised machines demand the use of special fittings, pressings, forgings, and screws of purely arbitrary designs, which have to be made to order by expensive processes which entail a delay of months, not merely of weeks.

Aeroplane makers who talked glibly a while ago about producing standardised aeroplanes in six weeks from receipt of order are now beginning to find out their mistakes. I cannot, at this juncture, be more specific in print, but if anyone in authority cares for further argument on this point, I am prepared to go into details.

Archibald.

There is yet another reason for wanting high-speed machines, that is Archibald. Apparently Archibald is the generic name given by the R.F.C. to the high-

angle guns used by the Germaus against aircraft. Just why this gun is so called is not very clear, though one gathers that when a shell fired by one of these guns just misses an aeroplane, the pilot piously exclaims, "Archibald! Certainly not!!" There may be a story connected with the phrase, if so my ignorance or my innocence must account for my not knowing it.

Anyhow, Archibald's shooting has been improving very much lately, and he is gradually getting closer and closer to the machines as his gunners begin to know the speeds of each type, and acquire the habit of judging altitude. Now, obviously, the faster the machine the less chance it has of being hit, either by a shell direct or by the falling shrapnel bullets.

Further, with the change in the weather it becomes necessary to fly low under the clouds to obtain any information at all, which means flying within range of rifle fire. Therefore a very fast machine has less chance of being hit, either by gun or rifle fire, while in sight, and it has the additional advantage of being able to dive through clouds at an enormous speed and to disappear again quickly.

The ability to vary altitude and direction with celerity is a very valuable quality under such circumstances. The experiences of Squadron-Commander Grey at Cologne and Flight-Lieutenants Collet and Marix at Düsseldorf prove this fact, for all were fired at constantly with rifles and high-angle guns when at heights between 400 and 600 feet, and at those heights slow machines would certainly have been hit.

Delayed Deliveries.

There is no wish to disparage the splendid work done by the machines hitherto used by the R.F.C. on active service, but now the more modern German aeroplanes are coming into use in numbers it is necessary for us to produce something better still, instead of sticking to a type which is bound to be at a disadvantage in speed, no matter how excellent its other qualities may be.

In proportion to power no doubt our standard machines are aerodynamically more efficient than these German products, but the latter have at least 50 per cent. more power, and our alternatives are either to use smaller and faster machines against them or to use big machines of still greater power. We can do either without as much delay in delivery as will be caused by waiting for specialised standardised parts.

In several cases, no doubt, it is impossible to obtain deliveries of these fast machines in sufficient quantities from the makers, but there seems no valid reason why we should not have machines built to their designs by other firms who have already received orders for standardised machines, and pay a generous royalty to the firm who designed them. As practically all these makers use fittings which are easily made, and use nuts and bolts throughout which can be bought freely on the open market, the subsidiary firms building to their designs would be able to give their first deliveries of complete machines while they were bargaining with engineering firms for the dies for special stampings in the official types.

The first desideratum at the moment is the quick delivery of high-speed "destroyers," and this can be assured by the method suggested. At the moment we have, happily, a very fair supply to go on with, and I venture to make these suggestions merely so that we may have an overwhelming force in the near future.

Defensive Machines.

In addition to fast scouts and destroyers we shall undoubtedly want a number of defensive machines, which, though they need not be so fast as the destroyers, must be at least as fast as the average new type German machine, which means about 70 to 80 miles an hour. These require considerable climbing speed and weight-carrying capacity.

One gathers that the French have a particularly useful machine of this kind in the new Voisins. These

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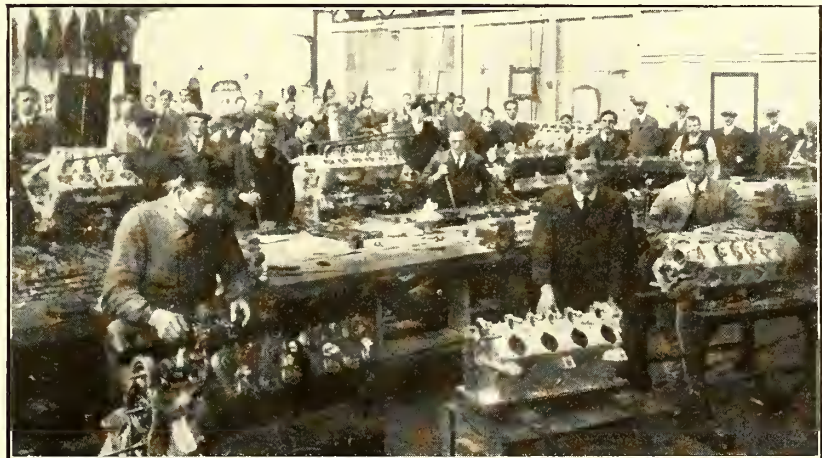
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SUNBEAM Aviation Engines.

The Sunbeam Factory at Wolverhampton is extremely busy just now, building chassis for H. M. War Office and the Russian Imperial Government, and aviation engines for His Majesty's Navy. Awarded £100 Prize in the Naval and Military Aeroplane Engine Competition.



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are big "pusher" biplanes, built largely of steel tubing and driven by 200-h.p. Salmson engines. They climb fast and can carry machine guns and a large supply of ammunition with ease.

For some time before the War began the Vickers Co. were experimenting with a gun-carrier driven by a 100-h.p. Gnome, and after various modifications they succeeded in producing a machine which experienced pilots say is very easy to handle and flies well in any kind of wind. A number of these seem to be in use already, and one hopes to see many more, for this type, with its high speed, would make an excellent air-ship destroyer, as well as being a valuable defence against hostile aeroplanes. Both the Short firm and the Sopwith Co. have also produced fast gun carriers for the Navy, so we seem to be very well off for this type of machine, as doubtless the German pilots abroad will discover in due course, and, of course, the Henri Farman and the "shorthorn" Maurice make quite useful carriers of machine-guns.

Still, we cannot have too many machines for such a purpose, and some of the smaller firms might well be put on to making them to the bigger firms' designs, for in none of them are there any extraordinary fittings which are likely to delay deliveries for any length of time, and we have plenty of pilots ready to fly them, who are still waiting for machines.

New Types.

This, of course, is no time for encouraging wild experiments, and even successful experiments mean an increase in the number of types in use, which means a further departure from standard. Nevertheless, we must not lose sight of the fact that some unknown designer may quite possibly produce a machine which beats anything we yet possess, and for that reason sane new designs ought not to be discouraged by the authorities.

There are quite a number of people in this country who are willing to put money into aeroplane businesses, since the R.F.C. has shown what aeroplanes are worth in modern warfare. Some of them, of course, are simply out to make money out of Government contracts for standard machines, but others would prefer to finance new types if there seemed reasonable prospects of their being purchased when they had proved their worth. Surely it should be possible for someone in authority to guarantee that a trial machine would be purchased if it made good its designer's claim to beat existing machines in some way or other which made it desirable for either Service.

Such machines could always be used for training purposes, even if they were not sent out for war service, owing to the trouble of carrying special spare parts for one machine. In this way we might, with any luck, evolve a machine of really high value, especially in seaplanes, where there is more scope for experiment than in any other branch. A little encouragement given to designers of original machines who have been so fortunate as to find financial back-

ing might easily make a big difference to the results of battles, if not of the whole War.

One can easily understand that, with everyone in Government offices as busy as they are, no one wants to be bothered with wild and woolly inventors, but there is plenty of room for improvement.

As to Pilots.

There need be no lack of pilots. There are men in quantities, of all ages and walks in life, only too anxious to join the R.F.C. or the R.N.A.S., and, though it is highly desirable that the tone of both Services should be kept as high as possible, there is no reason why if a man proves to be a sufficiently clever pilot to fly a high-speed "destroyer" he should not be employed as an N.C.O., or warrant-officer pilot, if he cannot be given a commission.

As a rule high speed flying is a young man's job, but there are men of 35 or 40 years of age who happen to have the right physical qualities for the work, and they should be encouraged to prove their worth. It would be easy, and comparatively cheap, to arrange for candidates who are pupils at civilian schools to be given trials on Service machines, before definitely deciding whether they should be appointed, even on probation, to either Service, and a good judge of flying could easily tell whether they shaped well enough to make it worth while to give them further education at the expenses of the Services. Such an arrangement would cost nothing except the running and repairing of the machines, whereas appointment on probation involves the expense of pay and allowances for uniforms.

Our present ascendancy over the Germans is more moral than mechanical. Certain Germans, notably Alsatians (who are really French) and Poles (who are Slavs) make fine pilots, but the pure Teuton, and the Prussian, who is ethnologically a kind of Finn, or at any rate a Lithuanian, are naturally bad pilots, not being over courageous personally and being slow in thinking and heavy-handed. The German difficulty is evidently the supply of pilots. We need have no such difficulty, if we go to work the right way, for with our weirdly mixed population of aboriginal Celts, Scandinavian pirates, and Norman conquerors, we have the right material for the work. Only we must pick our men on their merits, and not allow family or social influence or personal friendship to count for too much.

If there are six jobs open and a dozen equally suitable candidates are finally sorted out from a hundred applicants, it is only right and natural that the half dozen who bring personal recommendations should be chosen, but the sorting out operation should be so thorough as to avoid any chance of missing a really good man because he has no introduction from anyone with influence. Even if he wears badly cut clothes he may have hands and eyes on an aeroplane.

So far we have done remarkably well in men and machines, but we must do very much better in future. Hence these remarks.—C. G. G.



An R.F.C. Landing Ground in France. On the left a Bristol Scout, on the right a Shorthorn Maurice Farman.

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Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," October 20th, 1914.

Admiralty, October 16th.

ROYAL NAVAL AIR SERVICE.—The undermentioned probationary flight sub-lieutenants have been confirmed as flight sub-lieutenants: Anthony Rex Arnold. Dated August 1st, 1914. Philip Leslie Holmes. Dated August 1st, 1914. Walter rnett. Dated August 14, 1914.

tober 17th.
to Regular Units or Corps.—Royal Flying Wing).—The undermentioned second lieutenants resign their commissions. Dated October 17th. G. Miller and Reginald Chambers.

A Supplement to the "Gazette" of October 20th contains the following military appointments:—

War Office, October 21st. Regular Forces. Establishments.

SCHOOL OF MILITARY ENGINEERING.—The undermentioned temporary appointment is made:—Commandant—Honorary Brigadier-General Frederick Rainsford-Hannay, C.B., retired pay, vice Colonel J. E. Capper, C.B. Dated October 7th, 1914.

MEMORANDA.—The undermentioned to be temporary captain: V. Ker-Seymer, late major Army Motor Reserve. Dated October 3rd, 1914.

SPECIAL RESERVE OF OFFICERS.—Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—George Crosfield Norris Nicholson to be second lieutenant (on probation). Dated October 21, 1914.

A Special Supplement to the "London Gazette," published on October 22nd, contains the following:—

MEMORANDUM BY THE DIRECTOR OF THE AIR DEPARTMENT,
ADMIRALTY.

Commander Charles R. Samson, R.N., was in command of the Aeroplane and Armoured Motor Support of the Royal Naval Air Service (Naval Wing) at Dunkerque, between the dates September 1st to October 5th.

During this period several notable air reconnaissances were made, and skirmishes took place. Of these particular mention may be made of the aeroplane attack on September 4th on 4 enemy cars and 40 men, on which occasion several bombs were dropped; and of the successful skirmishes at Cassel on September 4th, Savy on September 12th, Aniche on September 22nd, Orchies on September 23rd.

On September 22nd, Flight Lieutenant C. H. Collet, of the Royal Naval Air Service (Naval Wing of the Royal Flying Corps), flying a Sopwith tractor biplane, made a long flight and a successful attack on the German Zeppelin Airship Shed at Düsseldorf.

Lieutenant Collet's feat is notable—gliding down from 6,000 feet, the last 1,500 feet in mist, he finally came in sight of the Airship Shed at a height of 400 feet, only a quarter of a mile away from it.

Flight Lieutenant Marix, acting under the orders of Squadron Commander Spenser Grey, carried out a successful attack on the Düsseldorf airship shed during the afternoon of October 8th. From a height of 600 feet he dropped two bombs on the shed, and flames 500 feet high were seen within thirty seconds. The roof of the shed was also observed to collapse.

Lieutenant Marix's machine was under heavy fire from rifles and mitrailleuse, and was five times hit whilst making the attack.

Squadron Commander Spenser Grey, whilst in charge of a flight of naval aeroplanes at Antwerp, penetrated during a 3½ hours' flight into the enemy's country as far as Cologne on October 8th. He circled the city under fire at 600 feet, and discharged his bombs on the military railway station. Considerable damage was done.

October 11th, 1914.

The same Supplement to the "London Gazette" contains the following notification:—

Admiralty, October 21st, 1914.

The King has been graciously pleased to give orders for the following appointments to the Distinguished Service

Order, and for the award of the Distinguished Service Cross (late Conspicuous Service Cross) in respect of the undermentioned officers in recognition of their services mentioned in the foregoing despatches:

To be Companions of the Distinguished Service Order.

Commander Charles Rumney Samson.

Squadron Commander Spenser Douglas Adair Grey.

Flight Lieutenant Reginald Lennox George Marix.

Lieutenant Charles Herbert Collet, Royal Marine Artillery.

From the "London Gazette," October 23rd, 1914.

War Office, October 23rd. Regular Forces.

The undermentioned to be second lieutenants for service in the field. Dated September 16th, 1914:—

THE SUFFOLK REGIMENT.—Corporal T. S. Wynn, from Royal Flying Corps (Military Wing).

THE PRINCE OF WALES'S OWN (WEST YORKSHIRE REGIMENT).—Corporal Bernard Noel Asprey, from Royal Flying Corps (Military Wing).

THE CHESHIRE REGIMENT.—Private Arthur C. Addison, from Royal Flying Corps (Military Wing).

A Supplement to the "Gazette" of October 23, published on Saturday, contains the following appointment:—

War Office, October 24th. Supplementary to Regular Units or Corps.

ROYAL FLYING CORPS (MILITARY WING).—Second Lieutenant Richard R. Orr Paterson is confirmed in his rank.

A Third Supplement to the "Gazette" of October 23rd contains the following military appointment:—

War Office, October 26th.—Regular Forces.

Establishments.—Central Flying School: Captain Francis F. Waldron, 19th (Queen Alexandra's Own Royal) Hussars, a flight commander, Military Wing, to be an instructor, vice Captain A. C. H. MacLean, the Royal Scots (Lothian Regiment). Dated October 17th, 1914.

NAVAL.

The following promotion was notified at the Admiralty on October 26th:—

Flight Sub-Lieutenant G. Miller Dyott has been promoted to the rank of acting flight lieutenant, with seniority October 22nd.

* * *

The Secretary of the Admiralty issued on Saturday a report relating to the assistance of the Royal Navy to the Allied Forces operating against the German right wing on the Belgian coast. Therein it is stated that "the naval aeroplanes and balloons aided in the direction of the fire."

* * *

In the Southampton district there has not been much activity during the past week, owing to bad weather. Uneventful flights were made on the usual makes of machines over the Solent, and at Woolston the only flight of the week was made on Saturday afternoon, when a Sopwith tractor was taken out for test. It flew extremely well at a good speed. The arrival of a seaplane ship has roused much interest, and if the weather is favourable, we probably shall see some hard work from her. Some interesting bomb experiments were carried out in the district, with unexpected and encouraging results.

* * *

There has been quite a lot of flying around the Isle of Sheppey lately, especially during the early part of the week. Among the machines up were:—Maurice Farmans, Deperdussin, Sopwith gun-carriers, Vickers gun-carriers, Short gun-carriers, and Sociables, other Shorts, and a Bristol tractor. A Naval airship has been passing to and from the coast.

* * *

The "Evening News" correspondent at Hitchin reported on Wednesday, October 21st, as follows:—"About 10.30 last night an airship was seen hovering between Hitchin and Luton. It was carrying very brilliant lights, which were displayed at intervals, and after making two or three circuits, it disappeared in an easterly direction about 1 a.m."

[The Press Bureau had no confirmation of this report, and

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if it had had it would probably be of no value. An airship which took an hour and a half to make three circuits round Luton and Hitchin would not be a very terrible vehicle. It may have been one of our small naval airships visiting the Hewlett-Blondeau works, or considering the market price of straw hats for the Navy for next summer.—Ed.]

MILITARY.

The following passages from the descriptive account which has been communicated by an eye-witness present with General Headquarters deal with aircraft:—

In spite of the adverse weather the aviators of both sides have not been idle in the northern theatre of operations. To begin with, on Monday the 12th, a German airman flew over St. Omer and dropped five bombs on to it, apparently under the impression that the place was occupied by us. As a result, two women and a little girl were killed. On Wednesday a hostile aeroplane was brought down by rifle and machine-gun fire, and both observer and pilot were captured. The pilot was decorated with the Iron Cross, which, according to his own account, had been awarded to him as being the first German to drop a bomb on to Antwerp.

On the 15th three of our aeroplanes gave chase to a German machine. Unluckily the one machine of ours which was faster than the enemy's met with some slight accident and had to give up the chase.

A German airman recently made an unsuccessful attempt by means of four incendiary bombs to explode a French captive observation balloon. The missiles fell simultaneously on the circumference of a circle of about 50 yards diameter, and as they struck the ground emitted vivid red flames, followed by columns of dark smoke about 60 feet high. At the point where each fell was found a large mass resembling dark pumice stone, and the stubble was burnt in patches of about a yard in diameter.

The following is a translation of a leaflet that German aviators have been dropping over the French lines:—

FRENCH SOLDIERS.

The Germans are only making war against the French Government, which is sacrificing you and your country to the egotism of the English. Your commerce, your industry, and your agriculture will be ruined by this war, whilst the English alone will derive enormous profit from it.

You are pulling the chestnuts out of the fire for the English.

The news spread by your Government that the Russians are near Berlin is false. On the contrary, the Russians have been beaten in two great battles. 150,000 Russians have been captured and the rest have been driven in rout from German territory.

FRENCH SOLDIERS, SURRENDER!

So that this war, which is ruining your country, may be ended as soon as possible.

Rest assured that the prisoners and wounded are well treated by us.

In order to let you know the truth, the following testimonial from Surgeon-Major Dr. Sauve, of the French Army (Rue Luxembourg, Paris), is given:—

"I, the undersigned, declare that I have seen that in the German hospitals at Sommepey and Aure the French wounded receive exactly the same treatment as the German. I may add that not only the French wounded but also the prisoners whom I saw were very well looked after."

The terms of this summons to surrender cannot be said to be tactful; and it has not had the desired effect.

One regrets to notice marked deterioration in the "Eye-witness's" literary style during the past few weeks as compared with the dignified manner of the early reports. The recent efforts appear to have been produced by a politician rather than by a soldier. The matter of the reports is well enough, though it might easily be bettered, but the manner is cheap and undignified. One trusts that some reader of THE AEROPLANE at Headquarters will draw attention to this point. Incidentally, the "Eye-witness" refers to the paper issued to the German troops as the "Patrol," whereas it is called the "Parole." Inaccuracy, even in such details, is to be avoided in official reports.—Ed.]

It is reported from various French sources that the French military authorities have given the decoration of the Legion of Honour to two officers of each of the four squadrons of the Royal Flying Corps now operating in France. One learns that the honours have been allotted as follows:—

No. 2 Squadron, Capt. W. Lawrence, 7th Battalion, The Essex Regiment, and Capt. L. Dawes, The Middlesex Regiment.

No. 3 Squadron, Capt. L. E. O. Charlton, D.S.O., The Lancashire Fusiliers, and Capt. P. B. Joubert de la Ferté, R.A.

No. 4 Squadron, Capt. G. S. Shephard, The Royal Fusiliers, and Lieut. I. M. Bonham-Carter, The Northumberland Fusiliers.

No. 5 Squadron, Capt. (Honorary Lieut. in Army) R. Grey, Warwickshire Royal Horse Artillery, and another officer whose name is not known to our correspondent in this case.

Several air mechanics of the R.F.C. have also been awarded the Military Cross by the French authorities.

* * *

It is reported that the accident mentioned a week or so ago as having occurred to Capt. Charlton and Mr. Wadham of No. 3 Squadron occurred through a side-slip on a Blériot when they were endeavouring to get into a field over some trees when their engine had stopped. Happily Capt. Charlton was very little hurt and Mr. Wadham was only slightly cut about the head by splinters of the machine.

* * *

A telegram from Berlin to the "Giornale d'Italia" reports that a British aviator, whose name is given as Colonel Grey, descended at Frankfort owing to engine trouble. Colonel Grey, it is stated, has been taken as prisoner to Darmstadt.

This report doubtless refers to Captain Robin Grey and Captain Boger, and the descent at Frankfort suggests that they were out on a raid on Zeppelin sheds.

Although not officially mentioned in the casualty list, one gathers that Capt. Robin Grey, R.F.C., and Royal Warwickshire Artillery, has been missing for some weeks. It is said that he was piloting the machine on which Captain Boger, already reported missing, was observer. If this information is correct, it is peculiar that the casualty list should only include one of the two occupants of the machine. A recent German report that the two British aviators had been captured leads one to hope that the Italian report is the truth.

* * *

Quite one of the most interesting stories of the war is the account of an escapade which is attributed to a Squadron Commander who has already distinguished himself highly. This officer, with an observer, returning from a long reconnaissance, proceeded to land in a field which had been well in the rear of the British position. During their absence the British line had withdrawn and this stretch of country was then occupied by Germans, who could not be observed from the direction whence the aeroplane arrived.

As the machine landed and ran along the grass a couple of German officers rode out evidently to capture the occupants. With wonderful presence of mind the pilot opened up the throttle of the engine, which fortunately had not ceased revolving, and proceeded to get off the ground again. Knowing that an attempt to get straight up into the air would at once give away the fact that they were trying to escape, he kept close to the ground and waved his arm amicably to the German officers as he flew close past them. The observer, evidently grasping the situation, did likewise, and they flew in this friendly fashion for several hundreds of yards along the front of a large number of German troops without attempting to get to any height. Arriving at what was apparently the end of the German line the pilot turned round and flew back again, still quite low down but a little farther away, one presumes with the idea of preventing the Germans from seeing the Union Jack painted under his wings. After thus convincing the Germans that he was one of their own aviators, he proceeded to circle round them, gradually rising higher till he reached a height of several thousand feet, whence he promptly turned in the direction of the British troops and eventually arrived safely at the R.F.C. landing ground.

One must, of course, assume that either he skilfully kept the underside of his planes away from the enemy as he rose, or else his machine lacked the usual distinguishing mark. One cannot guarantee the absolute accuracy of the story, but knowing the officer to whom it is attributed, it seems quite possible that it is true.

* * *

The accident which led to Lieut. Mapplebeck, King's Liverpool Regiment, being wounded is worthy of narration. The story arrives in a very roundabout way, but the details may be taken as substantially accurate. This officer went up with the idea of destroying a German captive observation balloon with bombs, and did not carry firearms, presumably so as to replace their weight with bombs. On the way he met a German aeroplane and proceeded to manoeuvre over it so as to drop one of his bombs on it. Despite endeavours to keep out of the arc of fire open to the German's rifle, and before he could get into a sufficiently favourable position to drop a bomb on the machine, he was hit in the hip and severely wounded. This occurred at about 6,000 feet, but he managed to get down to about 100 feet before losing consciousness, endeavouring the while to reach a field where he saw a number of other aeroplanes. By a wonderful stroke of luck, although he must have been practically unconscious when he reached the ground, the machine landed without damaging itself or any of the other machines, and the ground turned out to be in the occupation of the R.F.C., so he was promptly put into one of our own ambulance wagons and properly cared for.

One gathers that the machine on which he was flying was a Bristol-built B.E., which had covered thousands of miles since the beginning of the war, and was then flying as well as ever. One also learns in a similar indirect way that this officer succeeded in blowing up a mechanical transport train of German ammunition with petrol bombs, as narrated recently by the official "eye-witness."

* * *

Colonel Capper, who vacates the appointment of Commandant of the School of Military Engineering, as noted in the "Gazette" of October 20th, to go on active service, will be remembered as the chief of the old Balloon Section, and the founder of the Balloon Factory, which later became the Royal Aircraft Factory. In the very early days of aeroplanes he did his utmost, despite the discouragement of higher officials, to assist the late Mr. S. F. Cody in the development of his original biplanes, and he was himself the first person to fly as a passenger in the British Isles. He also encouraged and took personal part in experiments with the Dunne biplane. We owe much to Colonel Capper for his efforts to place Military Aviation on a proper footing.

* * *

Captain V. Ker-Seymer, whose appointment is noted, was

one of the earliest members of the Royal Aero Club. He was one of the organisers of, and one of the hardest workers at, the various aeroplane meetings which took place in this country in 1910.

* * *

Mr. G. C. N. Nicholson, whose appointment to the Royal Flying Corps is noted, was private secretary to Colonel Seely during his period at the War Office. Mr. Nicholson has for some time been learning to fly at the Military School at Brooklands, and took his certificate recently. His acquaintance with both aeroplanes and arithmetic is doubtless considerably greater since he has risen above the political atmosphere.

* * *

Mr. R. Orr Paterson, whose appointment is confirmed, will be remembered as a pupil and later as an instructor at the Vickers School at Brooklands. Afterwards he joined Mr. Hunt and Mr. Dukinfield Jones in an exhibition tour in Shropshire, and later again he joined the Talbot-Quick Aeroplane Co.

* * *

One gathers from letters to the Press that Colonel J. B. Seely has written home to say that he is well, despite the fact that a wheel of his motor car was shattered by a shell. One congratulates the ex-Minister on his good health, and regrets that he did not explain whether he was in the car at the time of the accident or not.

* * *

A letter has been received by a correspondent from a captain, R.E., in which he says:—"There were three bombs dropped in our village to-day by a German aeroplane, one of them killed a woman and child. The offending airman was, however, sent to the ground by one of ours and either killed or taken prisoner, I don't know which.

"It is really very thrilling when you see an enemy's plane up in the air, and very soon after one or two of ours appear to hunt him down. I have the greatest admiration for our air people. They seem to be doing the job magnificently. It is very gratifying, too, to find that everyone realises our air service is better than either the French or German.

"They say that General Joffre, when he wants a specially important air reconnaissance made, gets our people to do it, not that the French are not very gallant and daring aviators, but they are not so good at observing as ours are, and, of course, accurate observing is the most important part of the whole thing."

The "Times" correspondent in Northern France reported on October 25th as follows:—

"A new British gun, used for the first time during the past few days, has provided a fresh terror for German airmen. A 'Taube' flew towards the headquarters of the British General Staff on Friday, scattering bombs with promiscuous but un-



In an R.F.C. Camp. A Blériot tandem and a "parasol" are standing ready, and various officers are awaiting orders. It may be noted that the weather does not now permit the attitudes of rest shown herein, and that comforts for the N.C.O.s. and men are urgently needed.

availing generosity on the way. Its career was, however, abruptly stopped by a shot or two from the new gun, which found its target with little difficulty. The machine, which was flying high, was not, unfortunately, brought at once to earth—it was only just within effective range—but it was so badly injured that it came down when it had completed only 10 miles of the return journey.

"Yesterday another German aeroplane tried to make amends for the previous day's failure, but before it had seriously begun its bomb-throwing operations it was fired upon and made a hasty flight towards the enemy's lines.

"Members of the Royal Flying Corps tell me that most of our airmen have a great affection for the service rifle—in addition to revolver and aerial guns—and that they have made extraordinarily good use of them when engaging hostile aircraft."

* * *

The pilots of the Royal Flying Corps are accepting the dangers of aerial reconnaissance with light hearts, but they have one righteous grumble, namely, that they are fired upon as much by the Allied troops as by the Germans. It seems to be almost impossible to teach the average soldier, whether officer, N.C.O., or man, the difference between machines of different nationalities, and identification marks painted on the machines are invisible at any height owing to halation. It seems possible, however, that there is a way out of the difficulty as suggested hereafter by a correspondent.

Various signalling devices have been brought out whereby jets of soot or smoke may be blown out of a reservoir by engine exhaust or other means. The possibility of fitting our machines with a light apparatus of this nature might be considered. Thus equipped the pilot of a machine who found himself being fired at by friendly troops could perhaps stop the assault by "tapping" out a simple signal with his soot jet, which should be easily visible through every officer's glasses within range. Attempts on the part of the Germans to imitate the signals might be frustrated by alteration of the signal daily by Headquarters, who would advise the troops in the daily orders of the signal for the day.

The danger is more constant in tactical than in strategic reconnaissance, and as the flights in such case are of shorter duration the extra weight of the signalling instrument might be compensated for by carrying less petrol.

* * *

It is stated by a correspondent in Paris that the leader in the attack on the German aeroplanes which were chased away from Paris early last week was a British officer on a Blériot who had come to Buc to fetch a new machine. It is reported that the officer in question was Lieut. Turner of the South African Defence Force.

* * *

Sergeant Barrs, formerly well known as an instructor at the Grahame-White School at Hendon, recently had rather a bad smash through a side-slip on a Blériot at Juvisy. He is now in hospital with a broken leg. The accident is rather extraordinary as Sergeant Barrs is quite a good pilot of Blériots.

* * *

Sergeant B. G. Cox, of the 5th Squadron Royal Flying Corps, writing to his parents at Windsor, says:—

"Our officers are super-heroes. What they do will never be known—fighting in the air in hurricanes. We have been under bomb fire from German aircraft, and are continually paying their aviators our respects with rifle and machine-gun fire."

FRANCE.

Two German aeroplanes succeeded in flying over the lines of the Allies between Compiègne and Paris on October 23rd and headed towards Paris. They did not succeed in reaching the capital, thanks to the vigilance of the armed aeroplanes over the outskirts of Paris, and were compelled to retreat.

It was reported from Paris that four German aeroplanes were destroyed on October 24th. At Reims a Taube which dropped a bomb on the city was chased and brought down by mitrailleur fire. A Taube and an Aviatik were both brought down near Montdidier. Another Taube was brought down by artillery at Gravelines, near Dunkirk, where it had already dropped two bombs.

It is reported that a French aeroplane, mounted by Corporal Strobick and his mechanic named Davis, on October 24th pursued and brought down a Taube machine in the region east of Amiens. The pilot and mechanic were decorated with the military medal.

A German aviator threw four bombs on Verdun on October 24th. One demolished a roof, the second did not explode, and two others fell in the Meuse.

The Exchange Telegraph Co. reported from Paris on Tuesday, 20th, that Doctor Emile Remond Frances, the senator, who was in the French Flying Corps, had been mentioned in dispatches for daring reconnaissances over the German lines. The reference is doubtless to Senator Reymond, who has done quite a fair amount of flying during the past year or two.

Unfortunately, news has been received of the death of M. Reymond, Senator of the Loire, who had distinguished himself as an aviator before and during the war.

The "Telegraph" reports that while reconnoitring he was struck by a bullet, but made a final effort to regain the French camp. His strength failing, the machine fell at an equal distance between the two opposing armies. The result was a fierce fight for the possession of the fallen aeroplane and aviator, as the Germans recognised the value of the information he had obtained. In the struggle the French were successful, and Senator Reymond was carried back to the French lines, where he had still the strength to furnish to his superiors a detailed and precise report. Senator Reymond died a few hours later, but not before the general commanding his division had pinned the Cross of the Legion of Honour on his breast.

Private information to THE AEROPLANE is to the effect that M. Reymond and his passenger landed accurately, well within the French lines, stepped out of the machine themselves, though both severely wounded, and that M. Reymond collapsed a few seconds afterwards and died within a few minutes. There was no fight round the machine, and it did not fall and burn as the Exchange Telegraph Co. reported.

M. Reymond's death is a severe loss to the French aviation service. Quite recently he was specially mentioned in army orders. By profession M. Reymond was a doctor, and held the rank of surgeon-major in the French army, but at his own request he was attached to the aviation corps.

It is now known that Lieut. Noel, of the French Military Aeronautical Service, whose death gave rise to the story that M. Louis Noel had been killed, met his end with a passenger on one of the new French Voisin military biplanes. The machine was apparently badly overloaded and side-slipped when at a height of some hundreds of feet, so that it was unfortunately impossible for the pilot to regain control before it hit the ground.

The following quotation from Army Orders issued by General Gallieni, Military Governor of Paris, has been sent by a correspondent:—

"Citations à l'ordre de l'armée.—Paris, le 23 Sept., 1914. (10 e.) Le Soldat Pilote Noël, bien que blessé sérieusement dans un accident d'automobile, a refusé de se faire porter malade et est parti le soir même pour une mission dangereuse.

"(Signé) Gallieni."

This relates to M. Louis Noel's flight when, on hearing a rumour that a Zeppelin was over Paris, he went off in his two-seater Blériot to hunt for it in the dark, although suffering from the result of a serious accident in a car the same day.

The well-known French aviators, MM. Garros and Vidart, have returned from the front and are now at Saint-Cyr, flying as patrols over Paris.

The aviator Rost, with a detachment of other expert fliers, has been stationed at a point between Paris and Compiègne to intercept possible German aerial visitors to Paris.

The famous boxer, Carpentier, is now attached to the military aeronautical service at Saint-Cyr as a motor-driver.

Jules Védrines returned last week from the front for a rest, after having done very good work. He was appointed to Saint-Cyr for patrol work.

M. Pierre Prier, formerly of the Bristol Co., is now attached to the military station at Vincennes.

M. Brindejonc des Moulinais, who had already distinguished himself in the war, is reported to have done wonderful work at and round Soissons.

Eight Swiss aviators joined the French army at the outbreak

of war, and have all been appointed to one escadrille, which is operating on the Eastern frontier, so that they are comparatively near home. These aviators are MM. Bider, Audemars, Parmelin, Luigrin, Cuendet, Burri, Conte and Grandjean.

A letter from M. Henri Jullerot, formerly chief of the Bristol School on Salisbury Plain, states that he was last week stationed with the remnants of his regiment in Brittany training fresh troops. He had then been promoted to sergeant as the outcome of a considerable amount of hard service during the earlier part of the war. One hopes that M. Jullerot's ability will soon earn for him the commissioned rank which is obviously his by right, and one is somewhat surprised that an aviator of his experience and ability has not been long ago appointed to the French Flying Corps, where he would be of the greatest value in putting some of the military aerodromes on a business footing.

It is now practically certain that M. Garaix, who did good work on the Paul Schmitt biplane, was killed near Verdun.

One learns that one of the pilots killed in the collision between two Caudrons at Saint-Cyr, which was mentioned recently, was M. Vallier, the well-known Blériot pilot.

One of the most extraordinary episodes of the war occurred recently. M. Chemet, the well-known Borel pilot, was fired at and nearly hit by a battery of high-angle guns situated near the River Marne. He returned to Paris and reported the whereabouts of this battery. Thereupon the aviator Bailloud, the son of a French general of that name, started off on a Farman biplane loaded with bombs to destroy the said battery. On starting from the military station at Vincennes the machine, which was badly overloaded, side-slipped, and the pilot was killed. Shortly afterwards it was discovered that the battery which he was going out to destroy was a French battery.

Mr. G. H. Perris, of the "Chronicle," tells the following story of an escapade of M. Paulhan—who has apparently returned to aviation:—

"Passing over a German aeroplane station, they were hailed with a salvo of bullets. Then an enemy aeroplane came in sight below them. They dropped to meet it, and the mechanic aimed his quick-firer, bringing the German machine to the ground with a frightful crash. When M. Paulhan tried to rise higher he found that a bullet had cut a hole in his petrol tank, and that his engine was also damaged. With great difficulty he managed to keep in the air till he was just within the advanced French lines. Seeing him descend, a squad of Uhlans tried to rush the position. The mechanic, however, turned the quick-firer on them, and with the aid of some French chasseurs the attack was repulsed."

The Voisin biplane, to which reference has already been made as the most efficient war machine possessed by the French, certainly appears to be an extraordinary vehicle. Carrying a mitrailleuse with adequate ammunition, two to ten bombs—according to size—a pilot, an observer, and fuel for five hours, it is reported to climb to 2,000 metres—that is, about 6,500 feet, in ten minutes. This appears to beat anything yet achieved in this country or in Germany with such a load, and one can quite believe that, even with a 200-h.p. Salmson engine, the aeroplane itself must be highly efficient.

The following extract from a letter from an officer, dated October 14th, was published in the "Times":—

"The large square in front of the Hotel de Ville was packed with cavalry and armoured motors full of sailors and machine-guns when a Taube aeroplane hove in sight and made a bee-line for us. The inhabitants immediately fled to their homes in panic. Presently the Taube came lower and was within 1,500 feet of the ground. As soon as she came within range a perfect roar of musketry began and continued for five minutes. The Taube sheered off, was hit, swooped down, and fluttered away close to the ground. Civilians, odd soldiers on bikes and horses, officers in cars, rushed out of the town in mad pursuit. Very soon the motors and armoured cars full of sailors and marines were at the top of the hunt. The aeroplane was lost to view, and we flew from holloa to holloa to assist. Finally, after a point of five miles in six minutes, we came on the Taube with her nose buried in the ground and two rustics pointing excitedly to a small wood in which the avions had disappeared. Very soon an array of beaters, with every sort of weapon from a maxim gun to a spade, plunged into the wood. At this stage I left the hunt, hoping the two avions might at least not get

killed without mercy, provided always neither of them had been engaged in dropping bombs on women and children in French towns. The day before we arrived here five bombs were dropped on the place and killed two women and two little girls." [One may point out for this officer's benefit that an *avion* is an aeroplane of war, and not an aviator. Otherwise the story is well told.—Ed.]

Mr. Harold Ashton tells an amusing story in his book, "First From the Front." When he was arrested for blundering into an important military secret he dined under guard with a company which included several French aviators. Presently in came Garros. "He came in singing. His tumbled hair was wet with the evening dew. The ribbon of the Legion of Honour proudly stamped its presence upon his breast; his face was smudged and oily. In his hand he carried a live pheasant.

"'How did you catch it,' said I; 'in the air?'"

"'No, m'sieur—in the woods. Le faisan en la main vaut mieux que l'oie qui vole!'" He laughed a boyish laugh.

"'Madame!' he called to our hostess, 'I deliver this confere of the clouds to you. I have not the heart to wring its beautiful neck, but I much desire it for déjeuner to-morrow. Pray, will you do the business?—but out of my sight and hearing, if you love me!'"

"'Monsieur, it shall be done!' And done it was."

GERMANY.

A German official wireless message of October 20th respecting the campaign in the West says:—"An enemy's aeroplane attempted to observe our position in France, but was driven back by shrapnel. The aviation problem is wonderfully handled by the German forces, and the French aeroplane work is not to be compared with our own. So far the Germans have destroyed on an average one French aeroplane daily."

[Allowing for a natural desire to make the best of things, this message deserves serious consideration. German official reports, as opposed to the unofficial or semi-official reports of the German news agencies, are, as a rule, fairly accurate, as anyone must realise who has followed the German reports of Naval affairs.—Ed.]

Mr. J. T. McCutcheon, who presumably is representing an American paper, hence the courtesy extended to him, reported in the "Chronicle" on the 27th, as follows:—

"One of my experiences at Aix-la-Chapelle was being taken up in an aeroplane to a height of 2,000 feet, whence I had a marvellous view of what seemed the whole theatre of war. I could see the country for 70 miles round, and the grandest sight imaginable was that of the shells bursting like rapidly growing chrysanthemums in the direction of Laon. I shall never forget the wonders of that scene as long as I live.

"If I speak of the German officers as I found them, and say that I saw none of them commit a brutal act, or command it to be done, and beheld none of them drunk, even on the beautiful wines of Beaumont and Aix-la-Chapelle, it must not be thought that my sympathies are not with the Allies. It is just possible that I struck the good fellows of the German army, and the hottest English, French, Belgian, or Russian patriot will not so completely lose sight of the laws of proportion and average as to declare that in the German army there are no gentlemen."

A correspondent of the "Mail" in Belgium writes:—

"A detachment of the (German) Army Air Corps was quartered at my hotel. On Thursday evening, October 15th, the General Staff entertained about 30 or 35 Army airmen to a banquet. They had their coffee and liqueurs in the smoking-room, where I was the only civilian present. Here they spread out a large map of England with an inset map of London. A major began to deliver some remarks, illustrating what he was saying with a pointer. Though they talked low at times, I distinctly heard them remark the location on the map of the Bank of England, Buckingham Palace, the War Office, and the Houses of Parliament. After the lecture bottles of champagne were opened, and presently the officers began to talk to me. They declared that the next two weeks were to be the busiest weeks of their lives, for they were leaving the next day en route for London."

[One awaits their arrival with interest. Those officers detailed for the aerial defence of London are becoming a trifle bored with inactivity. Incidentally, these numerous "neuftral"

spectators, of whom we have read so much in certain papers of late, seem to rival even the famous "Doctor" Graves in their desire to "make our flesh creep."—Ed.]

The "Messagero" publishes a telegram from Lucerne which states that the Germans are making experiments on Lake Constance with a new Zeppelin which, it is solemnly declared, is fitted with a tube for throwing torpedoes. It is asserted that a flotilla of these new Zeppelins will be ready within a few months, when they will co-operate with the German fleet in an attack on the enemy's ships.—[The first part of this message is obviously true, for the new Zeppelin has been "experimenting" for about three months. Apparently, she is a very unsatisfactory ship. The torpedo-tube fitting is also probably true, though a somewhat useless addition, for a Zeppelin which came low enough to drop a torpedo within torpedoing range of a ship would provide a mark which simply could not be missed.—Ed.]

The "Express" correspondent at Geneva reported on October 21st as follows:—

"The most powerful Zeppelin yet constructed has just been completed at Friedrichshafen, on Lake Constance, and, without preliminary trials, flew away northwards at a great speed, cheered by the soldiers, who shouted, 'To London!'"

"Count Zeppelin himself was present at the launching of the new airship, which has a special armoured compartment for bombs near the propellers, and a big gun mounted in front to destroy aeroplanes.

"A second airship of a similar type will be ready at the end of this month, for the factory has been working day and night with a double staff since war broke out."

"As soon as the new Zeppelin departed—the thirty-first of its kind—work began on another airship.

"Other Zeppelins are being built at Düsseldorf, Colmar, and Berlin, the German staff desiring the number to be brought up to a hundred as speedily as possible."

[The paragraph is headed "31 New Zeppelins." In reality this machine is Z. 31, and the number includes all those which have been destroyed or are obsolete, as well as probably two or three not yet finished at Potsdam and Friedrichshafen to which series numbers have been allotted.—Ed.]

The Danish correspondent of the "Times," cabling from Copenhagen on October 20th, says:—"I learn from German sources that airship sheds are being constructed at Mögeltönden, in Schleswig, and at Rostock, in Mecklenburg."

[This message, taken in conjunction with authentic reports of German airship patrols along the Eastern Danish coast, seems to indicate a wholesome fear of a British naval attack in the Baltic.—Ed.]

RUSSIA.

The "Chronicle's" correspondent at Petrograd reported on October 22nd:—

"Further proof of the ineffectiveness of bombs thrown from German aeroplanes is afforded in the fact that German aviators over Warsaw missed the railway, the fire-station, and the telegraph and telephone stations, as also troops on the march. Only one was attended with any success. It dropped on an infantry baggage train 70 yards from the station for Vienna trains, killing two soldiers and wounding seven. Three civilians and several horses were also killed. During those anxious days in Warsaw, it is popularly reported that the Kaiser had said that, if the town could not be taken from land, it must be taken from the air. The appearance of aeroplanes seemed to confirm this, but the inhabitants soon became more or less indifferent to these."

In confirmation of the above, one finds the "Morning Post's" Petrograd correspondent reporting:—

"The Zeppelins have done nothing in a military sense since the war began. German aeroplanes cannot rise above the Russian aircraft, and have certainly failed as scouts. As billstickers they are expensive, but the dropping of German proclamations over wide tracts of country is the best they have done in Poland. Russian soldiers, Cossacks, and peasant guerrillas alike, regard them as new objects for the sporting instinct. The latter ambush them as they come down in fancied security far from any firing line, the Cossacks stalk them and bring them down, while the Russian aviators quickly send them homewards again, either with hand bombs or by

threatening from a higher altitude to beak them. The German, apart from his mechanism, is not a fighting man."

Writing of the latest Russian defeat of the German troops attacking in the direction of Warsaw, the "Morning Post's" Petrograd correspondent says:—"The Germans were already in conflict with such Russian forces as had gone out to keep in touch with their advance, and nothing could now be done to change the tactical disposition of the German forces, which was perfectly well known to the Commander-in-Chief from reports of his staff of fliers. Apparently German aeroplanes and Zeppelins, which had been spending valuable time in dropping futile bombs over the city, failed to detect the Russian corps held in readiness for this admirable rush into the fighting line. Perhaps they were too far away for a Zeppelin journey, but more likely the Germans, as usual, relied upon their spy organisation."

Reuter's special correspondent in Poland sends the following telegram from Warsaw:—

"According to all accounts the Germans were labouring under the delusion that they would be welcomed at Warsaw. They, therefore, only started dropping bombs on the city from aeroplanes comparatively late in the fighting. The effects in Warsaw in one day were forty-four killed and wounded, of whom only nine were soldiers. Another day there were sixty-two casualties.

"This time there were no soldiers among the killed and wounded, but many children, who were walking about the streets out of curiosity and neglected to take shelter. Each aeroplane apparently carried five bombs."—[The source of the above information induces one to doubt the accuracy of the figures, but if they are accurate they indicate the presence of a vast number of German aeroplanes in the Eastern war area.—Ed.]

The Petrograd correspondent of the "Temps" states that a remarkable new aerial Dreadnought was captured in Transylvania, the pilot being the famous aviator Beatche. The machine measures 55 ft. between the wings, is 35 ft. long, and the superficial measurement is 160 ft. It is a two-seater, has an automatic engine, and ample accommodation for guns and ammunition.

[The dimensions seem a trifle odd.—Ed.]

The Russians are now using it with wonderful results near Warsaw. They are also repairing the Zeppelin they recently captured, with a view to employing it against the enemy.—[This is reported by the "Exchange" agency, and should be compared with the "Reuter" story from Vienna.—Ed.]

AUSTRIA.

According to the "Neues Wiener Journal," an engineer of Prague, named Stiaszny, a former pupil of the Russian aviator Sikorski, who built a famous aerial 'bus, has constructed a new flying machine called "Dreadnought." This machine is provided with two benzine tanks of 800 litres capacity each, an oil tank with a capacity of forty litres, and receptacles for a great number of bombs. The "Dreadnought" is driven by two Gnome engines of 100-h.p. each. Last Wednesday, during its first trial flights, the fore part of the machine, while running on the ground, suddenly broke off, and the "Dreadnought" capsized, and was completely destroyed. The building costs are reported to have been 130,000 crowns (about £5,400).

[This story, which comes via "Reuter's" agency, should be compared with the similar story from the "Exchange" agency's story from the "Temps" Petrograd correspondent.—Ed.]

BELGIUM

The Press Association reported on October 21st that the British warships operating on the Belgian coast brought down a Taube aeroplane and a Zeppelin. The guns, it is stated, were responsible for 1,600 German casualties. [The Press Bureau had no confirmation of the above. The new motto for Press agencies seems to be "When in doubt, bring down a Taube, and if the guns are big enough, make it a Zeppelin." One may be fairly sure that no airship ventured out in daylight so near the British aircraft's base.—Ed.]

The "Express" of October 26th states that a Taube has been making daily flights from Ostend to observe the movements of the Allies' warships.

It was reported from Copenhagen on October 23rd that German aeroplanes reconnoitring over Holland reported a heavy cannonade from Flushing which was believed to indicate a naval battle.

A private dispatch from Berlin stated that in the battle between Nieuport and Dixmude Zeppelins gave the Germans considerable support.

Reports from Brussels state that the Germans are building airship sheds at Brussels, Ghent, Bruges and Antwerp. Count Zeppelin is now at Brussels busily engaged in inspecting the works. Several thousand men from the workshops at Friedrichshaven are at work, and the sheds will soon be ready. The number of airships which are being sent to Belgium in detached pieces is rapidly mounting, and a fleet of 25 ships must be ready before November 15th." [The Exchange Telegraph Co. is responsible for this report, which is probably wholly inaccurate, though it is possible that temporary sheds for non-rigidis may be in course of erection. The sheds are probably intended for aeroplanes. Anyone who has had a passing glance at Brooklands from a train during the past week would be quite prepared to report that a large airship shed was in process of erection there.—Ed.]

Miss Harley, who for six weeks nursed wounded Belgian soldiers in Antwerp, in recounting her experiences to a representative of the "Morning Post," said:—"Since I came home I have been surprised to find that some people live in fear of Zeppelins. In Antwerp there was no such thing as terror. The people were not afraid of Zeppelins. There was not the least semblance of panic. Some people went down to their cellars, in which they placed carpets and chairs. The first night we were on duty at our hospital we heard the crack of rifles in the street. We thought the Germans had entered the town. The rifle fire was followed by the booming of big guns. An attack was being made on a Zeppelin. It was the same airship which dropped bombs and killed some people in the outskirts of the city. The searchlights were effective in keeping the Zeppelins from the city. They would not venture past the searchlights. Even the bombardment had no terror for the Belgian soldiers in our hospital. The men had got used to the noise, and went to sleep under the bombardment."

It is usual to allow the halfpenny Press a certain amount of latitude in the matter of "journalise," but Messrs. Ashton and Young really exceed themselves in the "Express" of October 26th. Here are some extracts:—"Wherever they (the Germans) turn in their hordes our seaplanes and our aeroplanes spot their ferocious trail, mark the range, and the great guns from the sea scatter them. Slaughter has been tremendous. . . . Air engines, sea engines, land engines of death sweep this desolate country vertically, horizontally, transversely, with every form of annihilating mechanical fire. . . . Overhead, again, every now and then, the whirl and moan of the rival aeroplanes, almost disregarded now in the general presence of peril. . . . The nerve of those airmen! Through the heart of the hail of iron, the green fog-puffs of exploding shells, to get one small fact of information! We used to look upon the 'loop the loop' of the Germans overhead as a harebrained piece of impudent defiance to our infantry fire. Now we know that double loop has its own tell-tale significance, and means early trouble for infantry." [Looping the loop has never been a German custom, and one doubts whether it has become so in war.—Ed.]

ITALY.

On October 7th the Government tester Pensuti took up the new Caproni "Parasol" mentioned in these columns some time back, to 5,289 metres—say 16,000 feet—in 1½ hours. This is some 2,000 feet more than the highest altitude officially recorded before in Italy.

The machine, as well as being fitted with a 100-h.p. Gnome (monovalve), has, we are told, "an arrangement for varying the angle of incidence of the wing and of the empennage." It also has a special system of warping "effected by moving the back pylon supporting the stays." It is a monoplane and of about 95 square ft. of lifting surface, and climbed the first 3,000 ft. in under 6 minutes. I hear, further, that the battalion thinks and hopes much of it.

Southern local journals report that daily observations are being made over the Lowcen forts by Austrian aeroplanes in great comfort. Presumably, therefore, Montenegro is not using either aircraft of any value nor guns to bring such down. I see, too, that a mercantile marine Captain, whose vessel was stopped by a French man-of-war, says that her

officers were much amused by the attempts to drop bombs on them, which are being made daily by Austrian aeroplanes, without any success. Who knows, however, that practice may not make perfect even in this case?

The Wolsit firm who built Nieuports a while back are now said to be very busy at the same work. News that the army aviators are turning their attention to fixed motors of Mercedes type to be made in Turin is cheering. Also that a S.P.A. fixed is doing well in practical work. Which type of S.P.A. is meant? There was an Anzani type and a horizontal motor, as well as a car-like type of engine—all promising.

On 12th October T.R.H. the Duchess of Aosta and her two young sons visited the Mirafiori Aerodrome at Turin for the purpose of admiring the smooth working of the Course of Training now going on there, which is rapidly converting civilian "airmen" into first-class Military Pilots. The Duchess was shown how things are worked—not even being spared the motor room—the while biplanes from St. Francesco and monoplanes from the Venaria put into practice the theory then being imparted by Lt. Count Brunetta d'Usseaux, Instructor-in-Chief. So impressed was H.R.H. with the thoroughness of it all that she consented to the two boys having "joy flights" on Savoia-Farmans, piloted by officers of note.

By-the-by the Director of the Savoia Co. was reported as having joined the Course himself. It seems unlikely that he will have time to take part in it just now. The Farmans will, however, be more prominent in the course of the next month, when the biplane pilots will go under military training. Among the monoplane men now being dealt with, Maggiora, Landini, and De Dominicis figure largely—in the Press communiqués.

The civilians' preparation course of training was duly inaugurated with a moving peroration by the officer in command of the battalion, and a lot of flying was done on the subsequent days by several of the more active men. It is suggested as an annual event.—T. S. HARVEY.

MONTENEGRO.

A message from Cettinge, dated October 19th and delayed in transmission, says that a day or two earlier an Austrian aeroplane dropped several bombs in the harbour of Antivari. The idea was to damage the French fleet, but the bombs fell onto the quays without exploding. Another hostile aeroplane was also seen circling above the environs of Cetinje.

Comforts for the Aeronautical Services.

Once more readers of this paper are requested to hasten the delivery of the contributions they intend to send to the Royal Naval Air Service and the Royal Flying Corps. The weather is rapidly becoming wetter and colder, and those warm woolly things are more and more needed.

Let me again remind readers that contributions, in cash or kind, for the R.N.A.S. should go to Mrs. Sueter, "The Howe," Watlington, Oxon, and those for the R.F.C. should go to Lady Henderson, 8, Chesterfield Gardens, W.

One gathers that contributions are already coming in fairly well, but they should be very much larger. Naturally, large supplies of knitted things take some time to produce, but there is no excuse for delay in cash contributions.

The following are the subscriptions to date to the R.N.A.S. Fund:—Mrs. T. S. Hall, £25; Capt. and Mrs. Sueter, £5 5s.; Miss Moira Sueter, £1 1s.; Miss Willa Sueter, £1 1s.; the Integral Propeller Co., £5 5s.; Lady Samuel, £5; Mr. Spence, £2 2s.; Mrs. Gnosspelius, £2 2s.; Anon., £2 2s.; Sub-Lieut. Lan Davis, £1 1s.; Mrs. Talbot, £1; Hoyt Metal Co., £1; Mrs. Archer, £1; W. Brenkworth, jun., 17s. 6d.; Vickers Mechanics (1st sub.), 9s. 6d.; Vickers Mechanics (2nd sub.), 8s.; W. L. Wade, 5s.; C. J. Knight, 5s.; A. A. Hamgood, 5s.; total, £55 9s.

The response to the appeal to the aircraft factories is particularly disappointing. The first contribution, which came from the aviation department of Vickers, Ltd., of Erith, per Mr. Savage, amounted to 9s. 6d. to each fund, and, presumably, represented a shilling a head from each of nineteen men. All honour to the nineteen who headed the list, but what about the

thousands of other men in the aeroplane industry who have not given anything?

What is one to think of a workman drawing good wages—and overtime—who is working in a healthy and warm shop, who grudges a shilling for the comfort of better men than himself who are working and sleeping in the cold and wet? Let him remember that but for those men volunteering on his behalf he would by now either be a conscript lugging a rifle through the mud, or he would be under the heel of Germany, probably a mutilated piece of misery, while his womenfolk were the playthings of German soldiers. If he were forced to give half his wages to provide for our men in the field he might still consider himself lucky. The worst man abroad is a better man than any of us at home, for he is a volunteer who has gone out for our sakes. Let us do our best to make his job easier for him.—C. G. G.

London Lights Again.

During the past few days a number of ill-informed people, some bearing names made illustrious by the half-penny Press, have started agitating against the darkening of London. In consequence, on Monday last, Scotland Yard announced briefly and to the point that London would remain dark for the present and is likely to be so for some time to come.

This is eminently as it should be, but I would further direct the attention of Scotland Yard to the question of back windows. In this building of 166, Piccadilly, for example, while towards the front all is properly dinn, at the back there is a regular well of light, caused by the backs of the houses in the square formed by Piccadilly, St. James St., Jermyn St., and Duke St., and by the sky-lights of the kitchens of houses and aristocratic clubs in these streets. It must be likewise in other similar localities. The matter deserves official inspection.

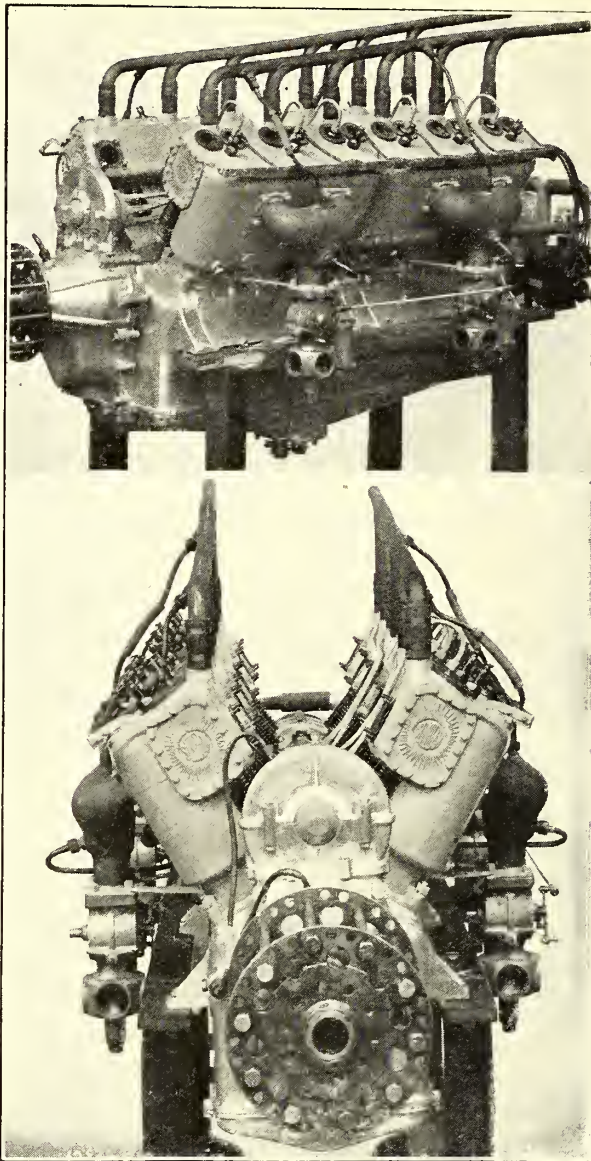
As to the general question of darkening London, if the effect is depressing so much the better. It will do the cock-a-hoop Cockney quite a deal of good to have the reality of a state of war brought home to him—like the waster in "Punch's" priceless picture who was impressed with the nearness of the "orrors of war" by the news that all the "sinymers" in Calais had been closed.

The average Englishman does not yet realise how close he is to the real horrors of war—and, be it noted, Belgian atrocities would be child's play to what a German army would do if let loose in England. Yet the majority of Englishmen still funk the idea of conscription, though they have before their eyes what Belgium has suffered through being unprepared to fight. Conscription in Belgium ten years ago would have saved her from invasion. Conscription in Great Britain immediately after the South African War would have finished this war a month ago, or would have prevented it altogether.

However, apart altogether from the delicate nerves of the pampered London Public, the darkening of London is desirable as a protection for the fat English purse. Those who have been over London in its present state say definitely that it is impossible to locate with exactitude any one spot in London on an ordinarily dark night, and as the roof area of London is very much less than the ground area—composed of streets, squares, parks, gardens, and backyards—the odds against any particular building being hit are immense. Distinct lighting of the streets would materially decrease the odds.

It is sufficiently obvious that some attempt must be made sooner or later by German aircraft to drop bombs on London. Zeppelins or other airships are only likely to make the attempt in calm weather, which probably means a fog in which we cannot hit back, and they are hardly likely to come in bright moonlight. The German threat was to make the attempt at the end of October. That means about the period of full moon, and one may assume that the Germans had noted the fact. Now, a journey from Bruges or Ghent in bright moonlight would be a fairly simple matter for any modern German aeroplane with a reliable engine like the Benz or Mercedes—a type hitherto severely discouraged by the civilian technical advisers of our War Office. Therefore one may deduce, without much exercise of brain power, that a plague of "Taubes"—as the press will certainly call the German machines of all sorts—is quite likely to afflict us on one of these clear moonlight nights.

This seems especially likely if the Germans find themselves being forced back from the coast during the next few days,



Side and end views of the 8-cylinder 150-h.p. engines now being built for the Admiralty by the Sunbeam Motor Co.

for obviously the German people would never forgive their aeronautical corps if, having got so near England, they retired without doing some damage.

If they do not come, so much the better for us, but if they do, for Heaven's sake let us avoid talking nonsense about murdering defenceless civilians, and attacking open towns. London is not an open town, it is an armed place, and those who choose to live in it must take their chance accordingly. I live in a top-floor flat, so presumably I take more risk than the man in the flat below, but I am not going to move on that account, and if I do happen to be laid out by the very first bomb I am not going to bear any malice against the man who dropped it—for he is only doing the job he is paid for, and war is war. If I am caught by the second it will be my own fault, for as soon as I hear any firing I shall pay an urgent visit to the tenants in the basement—to whom, unfortunately, I have not been introduced.—C. G. G.

The Zeppelin Bluff.

The following letter from Sir William Ramsay, the famous scientist, to the Editor of the "Times," will interest many people who believe news agency and other reports:—

"Sir,—Reports founded on statements in a book named

'The Secrets of the German War Office' are current that new Zeppelins are to be launched by the Germans containing a gas 15 times lighter than hydrogen, and made of a metal as rigid as steel and three times lighter than aluminium. As regards the first statement, little would be gained by filling an airship with a gas of no weight at all, if such a gas were possible. The buoyancy of a balloon is due to the replacement of air by a gas, hydrogen, $14\frac{1}{2}$ times as light as air. If the imaginary gas had no weight at all, the buoyant power would be increased only to $15\frac{1}{2}$ instead of $14\frac{1}{2}$.

"As for a metal existing of which the density is only one-third that of aluminium, chemists would agree that it is in the highest degree improbable that such a metal exists. There are excellent reasons for believing that no light metal remains to be discovered.

"That there is a small danger from bombs dropped from Zeppelins cannot be denied. But it would be well that short shrift should be given to any of the crew of a Zeppelin which might be captured after dropping bombs. This is not war; it is murder; and the statutory penalty is death by hanging. If it were generally known that such a penalty were the invariable consequence of being one of a Zeppelin's crew, it might deter men from volunteering on such barbarous adventures."

(Signed) WILLIAM RAMSAY, Hazlemere, Bucks, Oct. 22nd.

Appropos the same subject the Worthing police arrested on October 20th, Hermann Houser, a German who has been living in the town since January last. On his arrival in Worthing Houser interviewed the editors of the local papers on behalf of the "National Passenger Airship Association, London." Newspaper articles stated that it was proposed to establish a passenger airship service between London and the Continent, and Houser, who was a director, declared that he was seeking a place suitable for a harbour for the airships. He also approached the chief residents of the town, including the mayor and many of the councillors, and he is understood to have got some financial aid for the scheme from some of them. In the last few weeks Houser has figured in the Brighton Bankruptcy Court with liabilities of £3,751 and assets nil. He was sent to the detention camp at Frimley.

The suggestion made in some papers that Herr Houser really attempted to establish a base for invading Zeppelins at Worthing need not be taken too seriously. And there really are some Germans, as well as Englishmen, who believe that international airship services would lead to international peace. They may do so in years to come, but the time is not yet.

The entertaining rumour that a Zeppelin base was being established in the Chilterns, reported in certain of the cheaper papers last week, is explained by a letter published in the "Daily Chronicle" of October 21st:—"Sir,—Referring to the 'Rumours of Zeppelin Base in the Chiltern Hills,' your readers may reassure themselves. The operations referred to were undoubtedly boring for coal; the gear used was an ordinary core drilling plant. The work was stopped because, although coal was found, it was not in payable quantities. I personally saw the boxes with the 'cores' sent away from the railway station. The plant was removed, and I understood to carry out contracts for coal boring in Kent. The company doing the work was a Belgian company. The site where the boring was carried out is not a remote part of the Chiltern Hills, and is absolutely impossible for a Zeppelin base.—LLEWELLYN B. ATKINSON, A.M.I.C.E., Alster, Great Missenden, Oct. 20th."

The Sussex County Aero Club.

The Committee wish to thank members and others who have made further subscriptions to the prize fund for the recent sports.

The subscription list to date is as follows:—His Grace the Duke of Norfolk, £5; D. R. Sassoon, Esq., £15 15s.; Col. and Mrs. Carrington, £2 2s.; R. W. Harrison, Esq., £2 2s.; E. H. M. Denny, Esq., £1; J. Paterson, Esq., £1 1s.; H. E. Wilson, Esq., £1 1s.; W. P. Birch, Esq., 15s.; W. Lintott, Esq., £1 1s.; Capt. W. Sanderman, £1 1s.; Messrs. Coleman and Co., £2 2s.; total, £33.

The 73rd Brigade were not so fortunate with their first day (Sunday last) as the 71st and 72nd, as the weather was such that only four of the events could be taken. It is proposed to complete the day's programme next Sunday, on which date the 71st Brigade also hold their second day's sports

Congratulations.

MASSY—EDMONDS.—On October 22nd, at St. Stephen's, Hampstead, Captain Seaton Massy, 29th Punjabis, Indian Army, to Lettice Woodroffe, elder daughter of Charles Edmonds, 1, Kemplay Road, Hampstead.

Captain Massy is the son of Lieut.-Col. L. F. Massy, and a nephew of Colonel H. S. Massy, C.B., of the Aerial League. He was until recently Commandant of the Indian Central Flying School at Sitapur. All will wish him and his bride every happiness and good fortune.

The engagement is announced between Alexander James Andrew Wallace Barr, only son of the late Andrew Wallace Barr, of Glasgow, and Sylvia Lilian Foulkes, eldest daughter of the late A. G. Foulkes and Mrs. Alfred Mason, of Richmond.

Mr. Wallace Barr's good service in arranging at this critical period for adequate supplies of Cellon "dope" for our Service aeroplanes is well known to all concerned with aviation. All will congratulate him on his good fortune in his latest undertaking.

FROM DENMARK.

Owing to pressure on space it has been necessary to omit the interesting notes from our Danish correspondent lately. A further instalment reads as follows:—

I have just received the German "Flugsport" of 2nd September, and the following may be of interest to you. A letter from a German aviator:—

"My dear good parents:—Your last letter I have received here in the fields and many thanks for it. Father writes to me that Karl and Paul have been ordered out too, thus one fights on earth, one on the sea, and one in the air. No parents can have given their land a better offering, and you may look forward to the end of the war, because it is a glorious, if also an earnest task for us who fight.

"I will now describe you a day of my war service. Last Saturday evening I was ordered next morning at sunrise to fly in over the enemy's land. The task was the following one: From our garrison to go over a French fort, from there to cross the Meuse and examine the lines of defence on the Western bank and then fly back again, all in all a distance of 170 miles. I make my preparations by a close study on the map, whereupon I draw up the route, which lasts to midnight. Next morning my 'Gotha' dove is pulled out of its shed with the first cockcrow. I start from the manoeuvre field, take the direction to West, and rise in half an hour to 4,000 feet and have almost reached the French fort, when my observator, Lieutenant A., calls my attention to some small clouds of smoke in front of us. At once I understood, that we were shot at by the French artillery, and so rose to 6,000 feet, but yet the shots did not cease. However, as they did us no harm, we looked about us and saw that we were chased by 3 hostile aeroplanes, but to our great astonishment they soon disappeared. Later, we heard that two of them had been shot down by our artillery, and that one of the aviators got both hands shot off by a shell.

"As was a plan between us, we shouted three cheers when we passed the frontier, and soon we flew over battlefields, known from the war in 1870-71. We now got sight of big troops marching to North-East. From this moment we were shot at constantly; we saw how a company of foot soldiers stopped on the road, took their guns from their shoulders and prepared a shooting against us. Careless and silent I sat on my dove intently waiting what would follow. Suddenly, I found a trembling in the whole monoplane, that was all. And as I found out later, it came from four bullets which had perforated the planes. But sticking to my route I flew on. From V—I turned to East again. What I noticed for the rest, I am not allowed to write. After a flight of $3\frac{1}{2}$ hours we made a fine landing, and drove then in an autocar to the headquarter to deliver our report by word of mouth. When we had finished the commander-in-chief said that our report was undoubtedly of the greatest import, shook hands with us and thanked us. In this way we have much to do every day and till now I have had good fortune which I hope will last through the whole campaign. Hoping for a happy meeting, and 'God with us.'"
—I remain your grateful son.—HERMAN.

[The irrefragable tone of this letter would do credit to any British pilot. This type of German should be recognised.—Ed.]

Earlier I have written about the Deperdussin monoplanes that the Germans told to have taken by Reims, and now I find the following in the German papers:—When the Germans had marched into Reims, one colonel in the reserve, Mardersteig, who is a lawyer in Weimar, started on an expedition for finding some spare part for aero engines on one of the many aerodromes in the neighbourhood; he first visited Mourmelon, half-way between Reims and Chalons-sur-Marne, without result, and then went on to Betheny, the famous place of the first aviation meeting in the world in 1909 and of the aerodrome de Champagne with the Deperdussin factories and where the Gordon-Bennett race was held in 1913, and here Colonel Mardersteig was even more lucky that he had hoped to be. As he feared mines, he and his assistants worked very cautious; but there was no danger however, and great was their astonishment, as they found 9 biplanes and 20 Deperdussin monoplanes together with several Anzani, Gnome and Renault engines. Most of the aeroplanes were military ones, as the blue, white, red rosette told, and they were all ready for flight with their tanks full of petrol. A closer examination brought further 29 Gnome engines for the day, as well as several Renault and one Le Rhone engines, all well kept, some of them even with receipt-date from July, 1914.

The farmers of the neighbourhood told that the workmen had left the factory already a month ago, and it was very likely the Army property they had tried to hide there. The booty which had thus been captured by the Germans was of a value of almost 1,000,000 francs.

Aerial "Mines."

According to the New York correspondent of the "Daily Telegraph," a member of the Army General Staff at Washington, who is an expert on submarine mining, says that it is entirely feasible to "mine" the air above fortifications against attacks by dirigibles and aeroplanes. This expert's plan of defence is analogous to the mining of marine approaches to ports, and consists of sending aloft each evening a large number of small captive balloons at varying altitudes, carrying a sufficient amount of explosive to destroy the aeroplanes or dirigibles with which they come in contact.

These balloons can be supplemented by a number of kites provided with long tails of malleable wire to foul propellers.

The aerial mines could be reeled in at daybreak. Many army officers here who have been carefully studying the subject believe that Paris or London could be surrounded by such a cordon of explosive balloons at comparatively little expense, and thereby completely foil any night attack by German aviators. The same idea, suggested, if one's memory is correct, by Colonel H. S. Massy, C.B., was described in THE AEROPLANE anything over two years ago.

Accelerating Wood Work.

Now that there is such an enormous demand for aeroplanes of all kinds, manufacturers who find the demand greater than their own shops can supply will doubtless be glad to hear of firms who can assist them to accelerate their output.

One such firm with whom it is well worth while to get into touch is W. G. Evans and Sons, 1, Williams Mews, Stanhope Street, Euston Road, N.W. This firm has for a considerable time specialised on the most delicate kind of machine work connected with timber, and holds in stock wood of the best class. The firm is prepared to turn out spars, struts and ribs in prime quality clear silver spruce or ash. It can also supply best quality three-ply wood for fuselage work and the best French walnut for propellers.

The firm's experience in the selection and working of timber enables aeroplane manufacturers to trust them with the pro-

duction of finished parts, so that space in the maker's own works, which has hitherto been occupied by woodworkers, may be devoted to the building of wings or fuselages or to the erection of complete machines; and in this way, of course, production can be considerably accelerated.

Samples of the firm's woodwork have been inspected, and the writer has no hesitation in saying that they are fully up to the quality required for high-class aeroplane work.

Shock Absorbers.

Manufacturers who have found any difficulty in obtaining rubber cord for shock absorbers of the right quality, or find delay in delivery, will do well to communicate with James Ball and Co., 57a, Hatton Garden, E.C. This firm is specialising on shock absorber work, and will be glad to quote for any type of this fitting made to customers' own specifications.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Windy	Windy	Fair	Windy	Fair	Misty	Fine to Wet
South Coast	Windy	Windy	Fine	Windy	Windy & Rain	Fine	Wet
East Coast	Windy	Show'y	Fine	Show'y	Fine	Fine	Show'y
Southampton..	show'y	Fine	Fine	Show'y	Rain	Rain	Rain

Hendon.—AT GRAHAME-WHITE SCHOOL: Instructors: Messrs. Manton, Winter, Shepherd and Russell. Pupils with instructor: Probationary Flt.-Sub-Lieuts. Barnes, Cooper (new pupils), Bray, Hodson, Watson, and Messrs. Greenwood and Y. Y. Liu. Straights alone: Flt.-Sub-Lieut. Ffield and Mr. Stalker. 8's or circs.: Flt.-Sub-Lieuts. Allen, England, and Morgan, and Messrs. Carabajal and Easter. Flt.-Sub-Lieut. England passed brevet test A. and B., but too dark to take test C. Certificate taken: Flt.-Sub-Lieut. Allen. Machines: Grahame-White propeller biplanes.

AT THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. R. Desoutter and R. M. Murray. Rolling: Sub-Lieuts Bird and Tench, Messrs. Beynon, Williams (new pupil). Straights: Messrs. Barfield and Stevens. 8's or circs.: Messrs. Christie and Ivermee. Machines: Three Caudron biplanes. One new 35-h.p. machine has been put into commission.

AT LONDON AND PROVINCIAL AVIATION CO. SCHOOL.—Instructors: Messrs. W. T. Warren and M. G. Smiles. Strts.: Mr. W. White. Rolling: Messrs. Moore, Abel, Derwin, 1 hour each. Machine: 1 L. and P. tractor biplane. A new Brevet machine is now ready for tests.

AT HALL FLYING SCHOOL.—Instructor: Mr. J. L. Hall. Pupils: Mr. J. Rose 4 strts., A. Cini 4 strts., Mr. J. Lloyd Williams (New Army pupil) 8 strts. showing good progress for a beginner. 8's: Mr. J. Rose 6 mins. Machines: Hall tractor biplanes. On Sunday, Kinematograph Film was taken by the Climax Film Co. with great success.

AT BEATTY SCHOOL.—Instructors: Messrs. Geo. W. Beatty and W. Roche-Kelly. Pupils at work: Messrs. Leong, Virgilio, Gardner, Aoyang, Parker, Whitehead, Jenkinson, Lection-Smith, Beard, Beynon, Moore, Newberry, Anstey Chave, Christie, Donald and Wainwright.

Eastbourne.—AT E.A.C. SCHOOL: Instructors: Messrs. F. B. Fowler and R. C. Hardstaff. Pupil with instructor: Flt.-Sub-Lieut. Iron. 8's or circs. alone: Flt.-Sub-Lieuts. Petre (14 mins), Huskisson (31), Iron (36). Flt.-Sub-Lieut. Petre completed certificate tests. Machines: E.A.C. biplanes.

Shoreham.—AT PASHLEY BROS. AND HALE SCHOOL.—Instructors: Messrs. E. and C. Pashley. Pupils with instr.: Messrs. Menelas Babiotis, J. Sibley, and J. Morrison. 8's or circs.: Messrs. C. Winchester, J. Woodhouse. Machines: H. Farman and Pashley propeller biplanes. Mr. J. Woodhouse, who went through the defence of Antwerp, has now returned.

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YOUNG Gentleman, 23, public school and university, three science degrees, well up in aeronautics, scientific and general engineering subjects, offers services; experience in research and aeronautical construction; recently discharged (by Austrian) for applying for naval air commission; exceptional references.—Box 607, "The Aeroplane," 166, Piccadilly, W.

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WANTED, First-class Joiners only; highest wages paid to good men with aeroplane experience; no others required.—Send particulars of experience and references to Mann and Grimmer, Arlington Aeroplane Works, Surbiton.

WANTED immediately, Aeroplane Erectors and Fitters, none but first-class men need apply.—Send references and full particulars of experience to White and Thompson, Ltd., Midleton, Bognor.

JOINER-ERECTORS or Fitter Erectors, also Sheet Metal Workers wanted at once.—Apply, giving rate and full particulars of past experience, to The Eastbourne Aviation Company, Ltd., Eastbourne.

PHOTOGRAPHS.

AVIATORS ON ACTIVE SERVICE.

PORTRAITS of the majority of the British Aviators who have volunteered for active service during the war may be obtained from F. N. Birkett, 97, Percy Road, Shepherd's Bush, London, W. Unmounted, post free, Sizes 12 by 10 in., 2s. 2d.; 8 by 6 in., 1s. 6d.; 6 by 4 in., 1s. 2d. Mention **THE AEROPLANE** and write for the list of the largest collection of aviators' portraits in this country.

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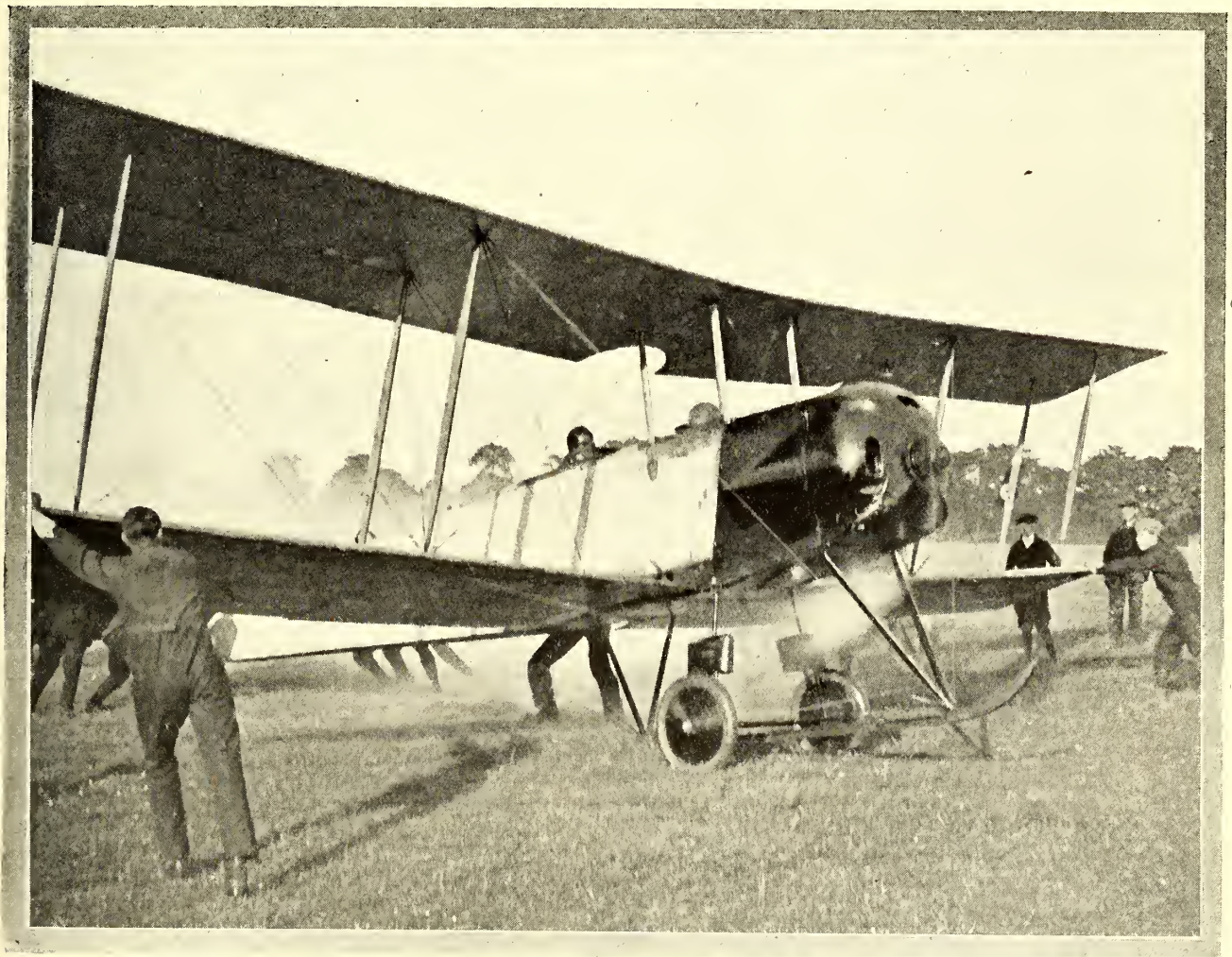
Edited by C. G. GREY. ("Aero-Amateur")

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WEDNESDAY, NOVEMBER 4, 1914.

No. 19

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Scientific versus Sportsmanlike War.

Quite a long time ago—dates are always hard to remember, and generally not worth remembering—a number of dear old gentlemen who believed in the humanity of man held sundry meetings in Switzerland and drew up a number of excellent rules, more or less on Queensberry principles, for the conduct of war, telling all nations exactly what was fair and what was not fair. The whole business was called the Geneva Convention. More recently, at some date equally vague, more meetings were held in Holland, which endeavoured to make war still more humane, and had as their basic idea the notion of substituting argument and arbitration for war, happily forgetting that, just as every personal argument is really a free fight in embryo, so a diplomatic discussion is only the incipient stage of a war, and also forgetting that arbitrators are likely to quarrel among themselves, or, at best, are apt to become as unpopular as an impartial referee at a football match. These later meetings were known as the Hague Conferences, and were even more useless and misleading than the Geneva meetings.

The fallacy at the bottom of all these meetings and their resultant rules was a misguided belief that the human race has become more civilised in the last few thousand years. All these dear old gentlemen were highly educated and well brought up, and probably not one of them had ever come into really close contact with the lower strata of the working classes of their own countries, consequently they believed that the bulk of their own people were as they were themselves—honourable in their personal conduct, compassionate to the conquered, and so forth. They forgot that heredity is the only thing that can tone down the brute beast which forms part of the composition of all men, and that education alone is useless. Education merely increases the brute breast's capabilities for evil. Lack of education may decrease the ability to be or do good, but badness or goodness is constitutional in the individual, and certain virtues and vices are hereditary in certain families or nations or races.

Sportsmanship.

The chief virtue of this country is chivalry—or, as we should call it, sportsmanship. It is ours by descent from our Norman aristocracy, who received it from France, where the reckless and brutal Norse pirates blended curiously with the somewhat effete and formally chivalrous French aristocracy—composed of a mixture of Gaul, Roman, and Frank—and produced that still more curious being, the English gentleman. He is called English as a rule, but actually he is still Norman, no matter what part of the British Isles produces him. The Scottish nobility are largely Norman—Robert Bruce was, I believe, Robert de Brouse in reality—and the Irish are still more so, as, for example, all the Fitzgeralds, Fitzmaurices, and hosts of others, whose descendants have given England more trouble than all the rest of Ireland put together.

Chivalry was originally a Latin institution, and the remnants of chivalrous behaviour linger in Italy and Spain. In France it survived till the time of the Revolution in an exaggerated and decadent form, which we found in the old wars, as in that splendid

example when, after a French and British force had manoeuvred for position and had finally come face to face, the French commander advanced to the British line, bowed profoundly to the British officers, and said: "Tirez, Messieurs les Anglais"—chivalry demanding that he should ask his enemy to take first shot. If my memory serves me right, that was at the Battle of Fontenoy—not far from where our troops are now fighting—and the chivalrous debate of formal battle was spoiled by a brigade of practically minded Irish blackguards in the French service, who charged, yelling indecently, into the English ranks and scuppered the crowd. It is the only real defeat the school-books on English history admit, so it must have been a fairly bad one. Curiously enough, our old friend Froissart, to whom Sir Arthur Conan Doyle owes so much, writing during the period of Edward III and Richard II, laments that even then it was impossible to instil into the Germans the principles of true knightliness.

It was mere chivalry which prompted the action of the officer, mentioned a week or two ago by the official "Eye-witness," who, creeping through a wood, came on an unsuspecting German sentry, and, instead of shooting him from behind a tree, or strangling him quietly, merely gave him a violent kick behind which sent him off howling down the road. It was a very sporting but horribly unbusinesslike action, for that same German may live to kill that same officer, not to mention half a dozen of his men, with a machine-gun. That is merely an example of where chivalry does not pay in war. Incidentally, the kick demonstrates the element of brutality in British sportsmanship, for a more meticulous chivalry would have demanded a tap on the shoulder and a polite inquiry as to whether the German was willing to try the issue of a personal combat.

The British Article.

It is only when one gets the full meaning of that incident into one's understanding that one comprehends the weakness and the strength of the British soldier. The love of sportsmanship costs him dearly, where sheer ruthless brutality would attain his end more cheaply and quickly, but the spirit of sport, coupled with the remaining element of brutality, pulls him through where a stronger brute would break and where a weaker man would crumple away.

This curious blend exists throughout the rank and file of the Army, as well as among the commissioned ranks, partly because the officers lead their men in peace time to appreciate the sporting spirit, and partly because the man who enlists voluntarily in the Army is naturally a sportsman, being either of remote and possibly unrespectable Norman descent, or a Celt, or a Scandinavian Englishman. He is seldom of the pure Anglo-Saxon breed of Midland Englishman.

It was my fortune some twenty years ago to work for a period at the bench in a Midland manufacturing city where the bulk of the people are of the real Saxon breed. There I came to know the English workman rather too well, for it was there I learned what the contrivers of the Geneva Convention and the Hague

Conferences apparently did not know—namely, that the brute in man is just where it has been any time in the thousands of years since history began. At any rate, I learned enough to expect exactly the particular atrocities the German troops have committed in Belgium and in France, especially in the matter of their behaviour towards women.

Fléchettes.

Now, it is in the nature of things that the man who flies, having as a rule a more vivid imagination than the man who does not—or rather, one should say, than the man who does not want to fly—should be more of a sportsman. That is to say, he gets more fun out of running absurd risks himself, and he is less coldly murderous than the average man who makes war in a more businesslike way on the ground. Therefore I was not in the least surprised to hear the other day that several officers of the R.F.C.—some of them senior officers who know of old what war really is—strongly object to the use of the latest weapon designed for the destruction of our brethren the Germans—namely, the little steel arrows called by the French "fléchettes."

This projectile has already been described graphically by my Danish correspondent, who acquired his information from a German medical paper, therefore I need only remind my readers that it is a piece of steel rod about 7 inches long and about $\frac{1}{8}$ of an inch in diameter, pointed like a pencil for an inch or so at one end, left circular in section for about another inch of its length, and the remaining 5 inches machined out so that it is cross-shaped in section, just like the feathers of an arrow. When dropped from a height of three or four feet, one of these arrows stuck half an inch deep in good strong linoleum floor covering in this office, so its penetrating power when dropped from five thousand feet or so may be imagined.

A month or so ago a friend of mine was at one of the French military aerodromes when experiments were being tried with these weapons. The arrows are packed in boxes of fifty, and are released by opening the bottom of the box with a string. As the box opens, the arrows stream out irregularly, and distribute themselves thoroughly, as might be expected, when one realises that a fast aeroplane travels about 40 yards a second. The victim was an unfortunate cow, on whom the arrows were dropped from about 2,000 feet, though she did not live long enough to feel her misfortune, for three or four arrows struck her at once, and she died promptly. The peculiar thing was that not a single arrow stuck in the cow. They all went clean through her body or head and into the ground below.

Obviously, if dropped on a marching man, such an arrow would go through his head or shoulder and into the lungs at least, and in such a case the wound would be hopeless, for, though the nice clean hole made by a bullet will heal up fairly easily, that made by a pointed steel rod would be far worse, besides which a 7-inch piece of steel with the roughness of the machining still on the "feathers" would make such a mess internally that getting it out would probably do more damage than getting it in, and yet it would be impossible to leave it in, for a man could scarcely live with a 7-inch spike inside him, as he can with a bit of a bullet. Even in a limb it would make a worse wound than a bullet. Altogether it is a fairly barbarous weapon. Still, it is no more so than long-range gun-fire, against which infantry cannot reply, and its wounds are no worse than those made by shell splinters or Dum-Dums, so it seems rather like splitting hairs to object to it on the score that it is not a gentlemanly weapon.

Apparently the objection is that the arrow is silent and so swift that it can neither be seen nor heard in time to dodge it, as one may hear a shell from a gun or see a bomb dropped from an aeroplane, and therefore it does not give the enemy a chance. The argu-

ment seems too fine to be considered seriously. Actually the only gentlemanly weapon is a duelling sword, which is not very likely to kill or maim, unless the antagonists are unevenly matched; but, after all, its gentlemanliness is purely factitious, and in real war the best weapon is the weapon which kills most.

Of course, in theory, the idea of war is merely to disarm your opponent and occupy his territory, and not to kill or maim the population. That idea was one of the fallacies of the Geneva Convention, and the reason for the prohibition of Dum-Dum bullets. But when a soldier learns from experience that an attacking infantryman will still carry on with two or three bullet-holes in him, he makes quite sure, if he is a wise man, of stopping anyone he hits afterwards, and therefore spends his spare time in the trenches filing crosswise nicks in the noses of all his bullets and turning them into real man-stoppers. He is not going to take any chances, no matter what the Geneva Convention says.

Presumably, in a similar way, the fallacy underlying bomb-dropping is that, as the bomb can be seen, it is not really intended to kill, but merely to stam pede any troops in sight—at any rate, after the first bomb is dropped, the troops have the option of dispersing over the neighbourhood, whereas in the case of the arrows death comes silently and over a much wider area. A friend of mine in Paris tells me that in one set of experiments a strip of ground about the width of the road was marked out in spaces of a metre (about a yard) square, and that from a dozen boxes of arrows dropped from 4,000 feet they found hardly a single square in 50 metres' length which had escaped without an arrow.

The effect of such a hail of steel on infantry in close formation, or when lying behind low trenches, would be far more deadly than that of the same weight of bombs. By lying flat on the ground one may escape the effect of a bomb, unless it scores a hit direct, which it is long odds against, but lying flat, or even crouching, only exposes more surface to the arrows. And, of course, on cavalry the effect is worse than on infantry, for there is more horizontal surface to hit. Certainly one may agree that arrow-dropping is dirty fighting, but it is effective, and therefore desirable against an enemy who employs still dirtier methods.

German Science.

One of our aviators who returned from Belgium recently explained to me the precise reason for the systematised murder and destruction carried on by the Germans. He remembered that the German is primarily a laborious scientist, and his idea is simply to terrorise the inhabitants of a hostile country to such an extent that they are afraid to make themselves objectionable to their conquerors. In Belgium, for example, the German system has been worked so effectively that the miserable people who have remained in the country places fall on their knees at the sight of a German uniform, and, as a result, half a dozen men are sufficient to patrol a whole district, whereas under our system we should need a hundred men in every little village to keep our lines of communication safe.

By this scientific reign of terror the local inhabitants are also turned into the most effective of spies. A German commander in need of information merely rounds up a peasant family and tells the man that he is to get behind the British or French or Belgian lines, find out what troops are in a certain town or village, and be back in a certain time. If he is not back in, say, four hours, his family will have their hands cut off, and, if he is not back in eight hours, they will all be killed. The poor wretch knows that the threat will be carried out, and, because love of one's family is stronger than love of one's country, he does as he is told.

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to get hold of a shepherd and compel him by similar threats to drive his sheep along a hillside where our guns are thought to be concealed, and to stop driving them and let them feed at a spot a certain distance behind the exact position of the guns. In this way the German artillery gets exact line and very nearly exact distance. The system is slower, but more accurate than the use of air scouts. And the worst of it is that in most cases, when we catch and shoot these miserable spies, it means that the Germans kill or mutilate their families because they do not return.

As a part of the system of scientific and pitiless war this German method works with high efficiency, so long as they are winning, but when they are beaten they will find, as so many scientists and theorists do, how much they lose by neglecting to take the human element into account. Their science has raised in our own troops, for example, feelings which even the strongest discipline will never hold in check when once they get into Germany. Good sportsmen as our men are, they will be absolutely pitiless to the Germans, and I do not think our officers will do very much to restrain them. As to the French and Belgians, whose own women and children have been outraged by the Germans, their officers say openly that the men may do what they please when the Germans fall into their hands.

Naturally the stories of German outrages are violently exaggerated, for each outrage is reported by a hundred people and becomes a hundred outrages, which again fits the German scheme so long as they are winning, and reacts with compound interest when they are beaten, but the authenticated cases both of scientific outrages against persons and property organised by commanding officers, and of individual outrages committed by the soldiers and junior officers for their own amusement, ought to be enough to put out of our officers' heads any doubts as to whether it is ungentlemanly to use certain weapons or methods. If one could discover an effective method of distributing cholera germs or bubonic plague in Germany it would be quite justifiable in such a war as this, and it would be unwise solely because the infection could not be confined to that country.

As it is, we must fight to kill, not merely to knock out the enemy's troops temporarily so that they can come back at us after a month or two in hospital. If Germany is to be settled so that Europe may have peace, the killing must be on such a scale that Prussia, at any rate, will have to become polygamous if it is to be repopulated during the next century.

Motor Bandits.

When the German Army breaks, as it looks like doing at the time of writing, then will be the time when our aeroplanes, particularly of the R.N.A.S., armed with these steel arrows and bombs, and operating in conjunction with the "Motor Bandits" of the R.N.V.R.-tum-R.N.A.S. Armoured Motor-Car Brigade, or Squadron, or whatever their official term may be, will have

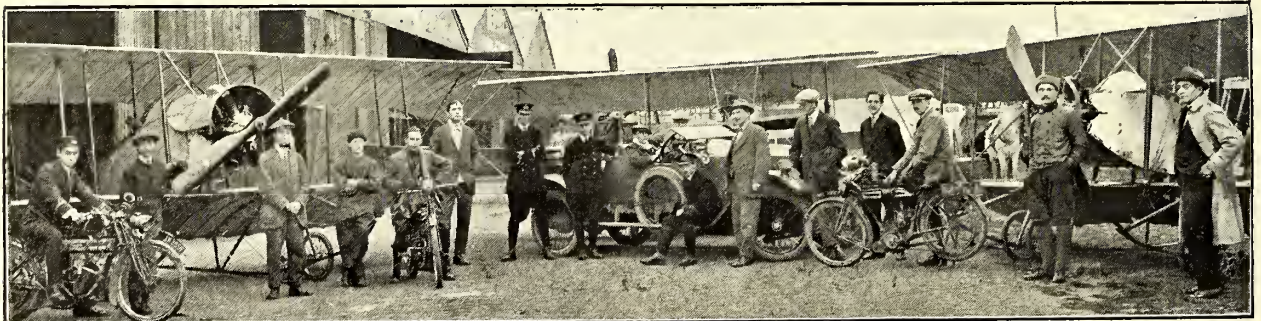
their chance. Against a fixed defensive line like that of the Aisne, such a force is useless, but against advanced cavalry, or against a rearguard covering a retreat, the combination is excellent.

The work is risky, for the Belgian armoured cars found that the Germans had plenty of tricks to meet them. One method was to compel a peasant, by methods already indicated, to direct the cars up a road through a wood. On reaching the end of a wood it would be found that a tree had been dropped across the road, and that the Germans were sitting up in the trees ready to shoot down into the open top of the car. And, as my informant said, when a bullet gets inside an armoured car, it goes on ricocheting off the steel sides, like a billiard ball off the cushions, till someone stops it with his body. Obviously bullet-proof cupolas as well as sides are needed. Two Belgian cars out of a party of three were wiped out in this way in one day.

It is just here that the co-operation of aeroplanes is desirable, the best type being a small fast single-seater scout, sufficiently armoured to protect the pilot against rifle-fire at 2,000 feet or less, and so fast as to be very difficult to hit. Properly organised, under capable officers, such detached bands should be very useful, but it is no use sending them out with all the responsibility in the hands of a skilful aviator or motorist, who may be as brave as half a dozen lions, and may have a perfect talent for destruction, but who has as much idea of discipline as a bull-pup in a boot-cupboard.

The planning and direction of the actual raids may be left to a motor bandit or an aerial pirate, though first-class pilots should not be wasted on these guerilla affairs, but the command of the bases from which they operate, and all organisation of supply and transport should be carefully left to someone who is more of a Moses than a Joshua. [N.B.—For the benefit of those who have left school:—Moses got his troops safely across the Red Sea and worked their commissariat department perfectly. Joshua instituted a very useful spy system by somewhat improper methods, and afterwards pushed down the walls of Jericho. Further note to an inquirer: No! Samson pushed down the pillars of a Nonconformist temple and perished gloriously in the ruins.—Ed.]

However, if the banditti are kept strictly to raiding, and if the men who are left in their camps are kept under proper discipline, they are likely to become a very valuable force, but, if not, they will probably be more trouble and expense than they are worth, and will bring upon the R.N.A.S. contumelious remarks from the R.F.C., for the Army always has a tendency to regard the Navy as being first cousins only two or three times removed from skull-and-crossbone pirates, which of course is more or less true, and accounts for the sailorman's efficiency as a fighter when left to himself without a brass-bound senior officer to tell him what to do.—C. G. G.



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GREAT BRITAIN.

From the "London Gazette," October 27th, 1914.

ADMIRALTY, October 24th.

ROYAL NAVAL VOLUNTEER RESERVE.—Temporary commissions in the Royal Naval Volunteer Reserve have been issued as follows:—

Lieutenant Noel Pemberton-Billing.

Sub-Lieutenant Robert Francis Macfie.

The Lords Commissioners of the Admiralty hereby give notice that, with the concurrence of the Lords Commissioners of his Majesty's Treasury, the post of civilian technical assistant in the Royal Naval Air Station, Farnborough, has been placed under Schedule B of the Order in Council of January 10th, 1910.

WAR OFFICE, October 27th. Regular Forces. Establishments.

ROYAL FLYING CORPS (MILITARY WING).—Lieut. Frank B. Binney, Royal Artillery, from the Reserve, to be a flying officer, and to be seconded. Dated August 31st, 1914.

A Third Supplement to the "Gazette" of October 27th contains the following military appointments:—

WAR OFFICE, October 29th. Regular Forces. Establishments.

ROYAL FLYING CORPS (MILITARY WING).—Lieut. W. F. R. Dobbie, the Gordon Highlanders, ceases to belong to the Reserve. Dated October 30th, 1914.

SPECIAL RESERVE OF OFFICERS.—Reserve Units.—Infantry.—6th Battalion the Royal Fusiliers (City of London Regiment).—Captain (temporary Major) Wilfred G. Lucas to be major. Dated October 30th, 1914. Major Wilfred G. Lucas is seconded for service with the Royal Naval Air Service. Dated October 30th, 1914.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—ROYAL FLYING CORPS (MILITARY WING).—Malcolm McBean Bell-Irving to be second lieutenant (on probation). Dated October 21st, 1914.

From the "London Gazette," October 30th, 1914.

ADMIRALTY, October 26th.

ROYAL NAVAL AIR SERVICE.—The undermentioned probationary flight sub-lieutenants have been confirmed in the rank of flight sub-lieutenant: Vincent Nicholl and Francis Gilmer Tempest Dawson. Dated September 16th, 1914. John Joseph Petre and Maurice Edward Arthur Wright. Dated September 17th, 1914.

WAR OFFICE, October 30th. Regular Forces. Commands and Staff.

The undermentioned appointments are made:—

BRIGADE COMMANDER. — Lieutenant-Colonel (temporary Brigadier-General) John G., Marquis of Tullibardine, M.V.O., D.S.O. Dated August 15th, 1914.

Major-General Richard M. Ruck, C.B., retired pay, to be a chief engineer. Dated October 22nd, 1914.

ESTABLISHMENTS.—Royal Flying Corps (Military Wing).—The undermentioned officers to be flying officers, and to be seconded. Dated October 19th, 1914:—

Second Lieut. Montagu R. Chidson, Royal Artillery, and Lieut. Francis H. Eberli, Royal Artillery.

Second Lieut. William C. Adamson, Special Reserve, to be a flying officer. Dated October 2nd, 1914.

TERRITORIAL FORCE.—Infantry. Westmorland and Cumberland.—Major Sir Bryan B. Leighton, Bart., to be lieutenant-colonel. Dated October 31st, 1914.

A Third Supplement to the "Gazette" of October 30th, published on November 2nd, contains the following military appointments:—

WAR OFFICE, November 2nd. Regular Forces. Establishments.

ROYAL FLYING CORPS (Military Wing).—The undermentioned temporary appointment is made: Captain Arthur B. Burdett, the York and Lancaster Regiment, from a flying officer to be a flight commander. Dated October 17th, 1914.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.

ROYAL FLYING CORPS (Military Wing).—Cyril Charles Wigram to be second lieutenant (on probation). Dated November 2nd, 1914.

NAVAL.

The following appointment was made at the Admiralty on October 27th:—

ROYAL NAVAL AIR SERVICE.—Probationary Flight Sub-Lieutenant R. J. F. Tench, to the "Pembroke," additional, for duty with Royal Naval Air Service, to date October 5th.

The following appointment was announced at the Admiralty on October 28th:—

ROYAL NAVAL VOLUNTEER RESERVE.—Temporary Sub-Lieutenant F. A. Brock, to the "Pembroke," additional, for duty with Naval Air Service, temporary, to date October 24th.

The following appointments were made at the Admiralty on October 29th:—

ROYAL NAVAL AIR SERVICE.—Probationary Flight Sub-Lieutenants V. Nicholl, J. J. Petre, and F. G. T. Dawson, confirmed as flight sub-lieutenants, with original seniority, and appointed to the "Pembroke," additional, for Royal Naval Flying School, Eastchurch, to date October 23rd.

Messrs. M. E. A. Wright, F. G. Andreae, and J. C. Brooke, entered as probationary flight sub-lieutenants and appointed to the "Pembroke," additional, for course of instruction at Central Flying School, to date November 2nd.

G. H. Scott, entered as probationary flight sub-lieutenant, and appointed to the "Pembroke," additional, for course of instruction at Farnborough Naval Airship Station, to date October 24th.

P. E. H. Wakeley, T. F. Driscoll, and G. E. Livock, entered as probationary flight sub-lieutenants, and appointed to the "Pembroke," additional, for duty with Royal Naval Air Service, Hendon; C. W. Dickinson, entered as probationary flight sub-lieutenant, and appointed to the "Pembroke," additional, for duty with Royal Naval Air Service, Farnborough, and C. H. Chichester Smith, entered as probationary flight sub-lieutenant, and appointed to the "Pembroke," additional, for Royal Naval Flying School, Eastchurch, to date October 27th.

Mr. R. M. Field, entered as probationary flight sub-lieutenant, and appointed to the "Pembroke," additional, for course of instruction at Hendon, to date October 28th.

It will be noted that this does not agree with the "Gazette" of the 30th, in which Mr. M. E. A. Wright's appointment is confirmed as from September 17th, while this enters him on probation as from November 2nd at the C.F.S.

The following appointments were made at the Admiralty on October 31st:—

The undermentioned probationary Flight Sub-Lieutenants have been confirmed as Flight Sub-Lieutenants with seniority as stated:—J. D. Maude, August 1st; G. L. Thomson, August 24th; J. M. D'Arcy Levy, August 5th; the Hon. D. O'Brien, August 18th, and all appointed to the "Pembroke," additional, for Royal Naval Air Service, to date October 30th.

ROYAL NAVAL VOLUNTEER RESERVE.—Mr. Cecil Paget has been granted a temporary commission as lieutenant-commander, R.N.V.R., and appointed to the "Pembroke III," additional, for duty with Royal Naval Air Service, to date October 27th.

Messrs. W. H. Reid, C. H. Parkes, E. H. Pooley, and F. Atkinson have been granted temporary commissions as sub-lieutenant, R.N.V.R., and appointed to the "Pembroke III," additional, for duty with Royal Naval Air Service, to date October 27th.

The following appointments were made at the Admiralty on November 2nd:—

Engineer Lieutenant T. R. Cave-Brown-Cave promoted to engineer lieutenant-commander, with seniority, November 1st.

Commander R. M. Groves, to the "President," additional, as assistant to Director of Air Department, with temporary rank of wing commander, to date October 29th.

NAVAL AIR SERVICE.—Mr. W. S. Newton-Clare has been entered as probationary flight sub-lieutenant, and appointed to the "Pembroke III," for duty with the Royal Naval Air Service, to date October 30th.

* * *

The Secretary of the Admiralty on October 31st issued the following announcement:—

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The old cruiser "Hermes" (Captain C. R. Lambe), which had been recently used as a seaplane-carrying ship, was sunk to-day by a torpedo fired by a German submarine in the Straits of Dover, as she was returning from Dunkirk. Nearly all the officers and crew were saved, but the exact loss cannot be ascertained until the men are mustered. The loss of the vessel is of small military significance.

The "Hermes" (Captain Charles R. Lambe) was an old second-class light cruiser, of 5,600 tons displacement. Built by the Fairfield Ship-building Company, Glasgow, the "Hermes" was laid down in 1897, and completed at the Govan Yard in 1900. Her dimensions were: Length, 350 ft.; beam, 54 ft.; with 20½ ft. draught. She was protected with a 3-inch armour deck and fitted with a 6-inch steel conning tower. The armament consisted of eleven 6-inch guns, nine 12-pounders, six 3-pounders, two maxims, and two submerged 18-inch torpedo tubes. The "Hermes," which was recommissioned on August 31st this year, and carried a normal complement of 456 officers and men, had originally a speed of 20 knots. She was until December, 1913, the headquarters of the Naval Wing of the Royal Flying Corps—before it became officially the Royal Naval Air Service.

Apart from sorrow at the losses to her crew, everyone in the Navy will be grateful to the Germans for her destruction. For years she has been a hopeless "crock." During naval manoeuvres last year it was only possible to coax 15 knots out of her in fine weather by nursing and tending every working part. Normally her speed did not exceed 10 knots. She was an uncomfortable ship to live in, and her use by the Naval Air Service last year and this has caused nothing but delays and hindrances to all working in conjunction with her. The R.N.A.S. should never have been saddled with her, and the Navy as a whole is well rid of her. Fortunately only one seaplane and some spares were on board at the time, so the loss to the R.N.A.S. in matériel is insignificant.

Shortly after noon on Saturday the first batch of rescued men were brought ashore by a torpedo-boat destroyer. All belonged to the watch below at the time of the explosion. Many had escaped in shirts and trousers. They stated that the "Hermes" was hit by two torpedoes. One struck the quarter and the other blew the stern to pieces. A destroyer and other vessels were soon on the scene, and nearly four hundred men were saved. The bodies of two men who had been killed were put in the mortuary on the pier. Two injured men were taken to the naval hospital after medical attention on the pier. The casualties were reported to be two killed, two wounded, and forty missing. Two Dutch trawlers in the vicinity sailed off as fast as possible.

One gathers that the R.N.A.S. officers on board the "Hermes" were Flight Lieutenants Brodribb and Busted, and Flight Sub-Lieutenants Garnett and Holmes. Lieut. Brodribb was severely injured and is reported to have both legs broken. He was blown into the sea by the explosion, but despite his injuries he managed to keep himself afloat for something like an hour till he was picked up. He has already had one or two nasty smashes with seaplanes, from which he has escaped without ill effects, and one wishes him an equally complete and early recovery from his present injuries.

Lieut. Busted was blown into the water at the same time, but was otherwise uninjured, and kept himself afloat comfortably till he was picked up. The two other officers were taken off by the rescue ships. A number of men were blown overboard at the same time, including several mechanics of the R.N.A.S., of whom one fears two or three have been lost.

* * *

The Admiralty being desirous of taking officers into the Royal Naval Air Service for the period of hostilities only, an Order in Council has been made sanctioning the entry of such officers, whether as commissioned or warrant officers, as from August 1st, with the pay, allowances, and widows' pensions granted to officers on permanent service, but without tuition fee or bounty on discharge.

* * *

The Admiralty announces that some further vacancies exist for good petrol mechanics, carpenters, joiners, and boat builders, aged between twenty-one and thirty-five years, to

join the Royal Naval Air Service. Successful candidates will be rated from 1st grade air mechanics up to chief petty officers, according to their experience and to the results of ability tests imposed. Pay from 4s. to 9s. per day, according to rank, with uniform, outfit, and "all found." Applications in writing, stating age and past experience, should be addressed in the first instance to the Naval Recruiting Officer, London Aerodrome, Hendon. All those selected will receive notification in due course as to date and place of examination, and should be prepared to produce birth certificates and testimonials from previous employers. Born British subjects only are eligible.

* * *

It is officially announced that in future all men enlisted as drivers in the Naval Motor Squadron will be rated as petty officer mechanics, with pay at the rate of 42s. a week instead of 28s. as heretofore. This presumably relates to the Squadron or armoured motor-cars—colloquially known as the "Motor Bandits"—which has been formed to operate with the Naval Brigade of H.M.S. "Crystal Palace," in lieu of cavalry scouts, and in conjunction with shoregoing naval aeroplanes. 42s. and all found is uncommonly good pay; in fact, compared with the pay of junior commissioned officers who have to feed themselves, it is rather high.

* * *

One of the most humorous stories of the Air Service came from Belgium recently and concerns one of our most skilful Naval pilots. This officer had been on reconnaissance on a B.E. biplane with a somewhat voluminous passenger sitting in front of him, so that his view ahead was more than usually restricted. On returning, the engine petered out and the only possible landing ground in sight was a field beside a river. To reach it it was necessary to execute a very flat glide over the top of a fort and across the river. This the pilot proceeded to do with his usual skill, leaning over the left side of the machine to ensure clearing the parapet of the fort and to see round the side of the passenger, whose natural bulk was increased by a large overcoat, firearms and other paraphernalia. Just as they cleared the fort there was a yell from the passenger and a crash as the right wing of the machine struck a flag-pole, or a post of some sort, standing on the parapet. Splinters and fabric flew from the plane, the right wings dropped and the machine executed a tasteful spiral, finishing up on its nose in about three feet of mud and water, the passenger thoroughly submerged and the pilot high and dry farther aft in the fuselage. In a second or two the passenger emerged, thoroughly soaked and very muddy, but otherwise unhurt, whereupon the pilot calmly remarked, "Well, you're wet already and I'm dry, so the best thing you can do is cart me ashore." To his everlasting credit he said the passenger "made a back" and carried the pilot safely to land without even referring to the escape he had from breaking his neck.

* * *

Mr. Pemberton Billing, whose appointment as lieutenant to the Royal Naval Volunteer Reserve was Gazetted on October 27th, is better known as the designer of the curious torpedo-shaped machine exhibited by him at the Aero Show. He is well known in connection with motor boats, and those connected with the earlier days of aviation will recollect him as the in-presario of the flying ground at Farnbridge, Essex.

* * *

Mr. R. F. Macfie, who is Gazetted as sub-lieutenant, R.N.V.R., was one of the earliest experimenters with aeroplanes in this country, and was one of the first people to produce a successful flying machine at Brooklands. Although produced with very inefficient equipment, his machine flew remarkably well for its period, and on it Mr. Macfie himself and Mr. James Valentine both passed for their certificates, his own being No. 49. In his young days Mr. Macfie passed through the Royal Naval Engineering College at Keyham, and afterwards saw service in the Army in South Africa. As an engineer he possesses unusual ability, and his experience in this direction, added to his experience of aviation and of active service, should make him a valuable acquisition. The fact that he should accept junior rank in order to enter the King's Service again is an example to many whose estimate of their own worth has led to their refusing subordinate rank.

Naval pilots were busy over the Isle of Sheppey in the early part of the week, much instructional work being done, but during the latter part there was little flying, owing to the weather. Various types of Shorts, Vickers gun-carriers, and Sopwith gun-carriers were about, and a number of machines were seen to fly across the Channel. Naval Airship No. 3 (Astra-Torres) has been about the district a great deal of late.

* * *

The "Pall Mall" is responsible for the following:—"H. L. Doherty, the famous lawn tennis player, who recently broke his right arm, has made such a good recovery that he has been able to join the Auto-Aircraft Naval Reserve." Will someone kindly explain what this new force is? Is it a squadron of inherently stable self-fliers, or is it a penny-in-the-slot aeroplane brigade, and is a recently broken right arm one of the qualifications for appointment?

MILITARY.

Lieutenant Cyril Gordon Hosking, R.F.A. and R.F.C., who was reported last week as having been killed in an aeroplane accident in the war area on October 26th, entered the Royal Field Artillery in July, 1910. He was promoted lieutenant in July, 1913, and was appointed to the Royal Flying Corps on December 17th, 1913. He was born on July 30th, 1890, at Karachi, and took his certificate (No. 472) at the Bristol School at Brooklands on April 30th, 1913. He was the fourth and youngest son of Mrs. Hosking, 1, Staverton Road, Oxford, and of the late Mr. Edward Hosking, I.C.S.

Captain Theodore Crean, who is reported as having been killed in the same accident in France on the 26th ult., was born on October 23rd, 1880, and received his commission from the Militia in the Lancashire Fusiliers in April, 1902, being gazetted lieutenant in March, 1906. He was attached to the West African Regiment from October, 1906, to September, 1911, and was transferred to the Northampton Regiment in May, 1908, being gazetted captain in June, 1913. He served in the South African War, 1901-2, receiving the Queen's medal with five clasps, and he was employed with the West African Frontier Force since February, 1913. Captain Crean was the only son of Mrs. Crean, of Chester. He was, one hears, acting as an observer at the time, and he does not appear in the Army List as an officer of the Royal Flying Corps.

The full details of the circumstances connected with this accident are known to a number of people in this country, and one hopes to hear ere long that the officer responsible for it has been duly called upon to take the consequences of his act.

* * *

One learns that Captain Sir Frank Rose, of the 10th Hussars, has been killed in action. He succeeded about eighteen months ago to the title of his father, the late Sir Charles Rose, who at the time of his death was chairman of the Royal Aero Club, a former M.P. for Newmarket, and a famous owner of race-horses. Sir Frank was the last survivor of four brothers, all of whom fought in the Boer War. One died in Ladysmith, and another was killed in action at Welkom. Captain Adrian Rose, of the Blues, the heir to the title, was married seven years ago, but contracted an illness on his honeymoon from which he never recovered. It will be remembered that Sir Charles Rose died in his motor-car in April of last year, returning after making a flight as a passenger at Hendon.

* * *

It will be noted that the chairman of the Royal Aero Club, the Marquess of Tullibardine, has been appointed a Brigade Commander, and that General Ruck, chairman of the Aeronautical Society, has returned to active service.

* * *

Sir Bryan Leighton, who is appointed to command a Territorial Battalion, learned to fly this year at Hendon, afterwards passed through the Central Flying School, and was appointed to the R.F.C. Reserve.

* * *

Lieut. W. F. Robertson Dobie, who is noted in the "Gazette" as ceasing to belong to the R.F.C. Reserve, has been appointed for duty with the Gordon Highlanders.

* * *

Mrs. Robert Boger has received a communication from Captain Robert Boger, R.E., Royal Flying Corps, who has been reported missing since the 5th ult., saying that he is a prisoner of war at Torgau and well. A similar message has been received respecting Captain Robin Grey, who was captured at the same time.

* * *

Mr. L. Moore Lilley, late of the Sopwith Aviation Co., has been appointed Second Lieutenant, Army Service Corps (Mechanical Transport Section).



REMINISCENCE: The picture shows Prince Maurice of Battenberg, who was killed last week, watching a flight by Mr. Pixton at Madrid. The personages from left to right are General Ligue, Director of Aeronautics for the Spanish Army, King Alfonso, Prince Don Alfonso, Prince Maurice of Battenberg, Prince Leopold of Battenberg, Princess Alfonso, and the Queen of Spain. The photograph has been kindly lent by Mr. Farnall Thurstan, late of the Bristol Co., who was with the Royal party at the time

FRANCE.

The following account of a narrow escape is translated almost literally from the "Echo de Paris" of October 27th:—

"IN THE SOUP.—In the afternoon of Saturday, one of our aeroplanes, steered by Captain-aviator Watt, with, as observer, Captain Chapitel, had a stoppage at B—, at which time he found himself at a height of 1,800 metres and at a distance from our trenches of about 5 to 6 kilometres. Thanks to the cold blood of the aviators, they landed cleanly without incident between the German and French trenches, but as these trenches are not remote the one from the other at that point but by one hundred metres, they had to suffer the terrible fire of the German infantry and artillery. The apparatus was destroyed, but the two aviators were able to hide themselves behind a stack of straw, and remained in that perilous situation, waiting to regain our trenches, when the hurricane of shells and bullets had ceased. In time the stack of straw was on fire. The smoke served wherewith to disguise themselves while they entered our own lines."

Evidently the aviators had a very narrow escape, for a French officer who was present estimates that the Germans in an hour fired 60 shells before they hit the aeroplane, which was "stymied" behind the stack, and after the stack was hit the pilot and passenger had to run a couple of hundred yards in the open across a ploughed field before reaching the French trenches, where they arrived very much "blown" but absolutely unhurt, and the observer was able to hand in a useful report of the reconnaissance.

One hears that the Comte J. de FitzJames, who will be remembered as a pupil at Brooklands, joined the French Military Aviation Service at the start of the war as a simple sapeur-aviateur piloting a Maurice Farman biplane, and made a very good showing. Unfortunately, he had to undergo a serious surgical operation and is only just now getting about again, and he is anxiously awaiting the doctor's permission to rejoin.

Another of the very early pilots who has suddenly revived owing to the war is Mijnheer van Ricsmsdyck, who has joined the French Military Aeronautical Service as a sapeur pilot of Maurice Farmans. He was one of the very first of the Dutch pilots and flew a Curtis at the famous Heliopolis meeting, at which the late Hubert Latham and Mr. Mortimer Singer flew. He has lately been laid up on the sick list, but rejoined recently. In civilian life he is a well-known painter and a noted big-game shot.

Apparently the accident which caused the death of Lieut. Noel of the French Army on a Voisin biplane was due to the gear of the propeller giving way, or the propeller fixing breaking in some manner. At any rate, the propeller broke loose and cut the main planes to pieces. His passenger, who was killed at the same time, was a plucky little ex-cavalry officer who was very badly smashed a year ago. Despite having one leg badly deformed, which prevented him either from fighting as a cavalryman or flying as a pilot, he joined the Aviation Service as an observer, and thus unfortunately met his death.

It is reported in French aviation circles that M. Chanteloup, whose brilliant flying on a Caudron caused such a sensation at Hendon last Christmas, has been killed near Verdun. One hopes the rumour is untrue, and that the cheery little sportsman is still serving his country with his usual skill.

Reports from Paris state that M. Pierre Verrier is in hospital at Juvisy, and is making rapid progress towards recovery. The news will be welcomed by his many friends in this country. Letters addressed to M. Pierre Verrier, Sapeur Aviateur, Hôpital Militaire, Juvisy-sur-Orge, Paris, will probably reach him in due course.

It is reported from Paris on November 2nd that last week King Albert took up his quarters in a little villa. The Germans were immediately informed of the fact through their espionage service, and on Wednesday an aeroplane dropped two bombs, which, however, fell in the garden and did no damage. The story is Reuter's and lacks official confirmation.

It is reported from Bordeaux that a part of the personnel of the French Naval Flying Corps and a number of engineers and mechanics have been placed at the disposition of the Ministry of War.

One learns that the big gun-carrying Voisin biplanes to which reference was made last week are fitted with 130-h.p. Salmson engines, and not 200 h.p. as was then stated. This speaks more highly still for the efficiency of both engine and aeroplane.

The following story is one of Reuter's "specials" and may be believed or not, according to taste:—"A stirring little episode which was recently witnessed in a French town in the war area is being talked about here to-day (Paris, Saturday). A Taube aeroplane, which was passing over the church, dropped a bomb which fell on the back of a horse. The animal was literally torn to pieces. Some people who were standing by were also struck more or less seriously by splinters. The Taube meanwhile continued on its course and passed over the railway station in which was standing a train filled with Indian soldiers. The report of the bomb was mistaken by them for gun-fire and the belief gained ground that they were being suddenly attacked by Germans. Then, so the story goes, an admirable scene was witnessed. In a moment the train was transformed into a fortress bristling with guns (sic). The soldiers were quickly informed that this was a false alarm and that no attack was threatening unless, may be, one from the skies. The Taube was shown to them and independent fire was quickly opened on it. A moment later the German aircraft fell into a field some distance away. No doubt it was carrying more bombs, because as the aeroplane struck the ground there was a terrific explosion and the three aviators who were in the machine were torn to unrecognisable shreds. This is the first Taube which has been brought down by Indian troops up to now."

[Almost anyone could have invented a similar story with more artistic verisimilitude about the details. A humorous touch is given by the "unrecognisable shreds" which were somehow pieced together as evidence that "three aviators" were in the machine—a most improbable crew.—Ed.]

The "Petit Parisien" reports that an officer of the Saxon General Staff was caught plundering the dead on the field of battle. In order to escape being shot he consented to indicate the position of the reserve batteries and ammunition trains of his force. A French aeroplane verified the information and fire was opened on the Germans, who were obliged to fall back, losing more than 600 dead and a quantity of matériel.

The "Daily Chronicle" special correspondent in Paris reported on October 28th a German air raid on Montdidier. A Taube flew over the town and dropped three bombs. Montdidier is an open town, and all the military which had previously been there had left. One bomb fell upon the courtyard of a farmhouse next to the hotel of the town. This hotel had been previously the headquarters of a general of brigade when the French troops had been at Montdidier. Some spy had evidently done his work well for it was a good shot. The occupants of the farm were all working in the field, but four horses in the stables were blown to pieces. The farmhouse and its contents were almost completely destroyed. In one of the bedrooms was found a baby of three weeks old surrounded by broken glass and falling plaster, but it had by a miracle escaped injury. The second bomb was an incendiary one. It fell upon a grocer's shop, which at once burst into flames. By the energetic efforts of the townspeople the fire was at last extinguished. The third bomb fell harmlessly in a neighbouring field. The career of the German was cut short. His machine fell near the French trenches, and a bullet put an end to him.

Mr. George Renwick, of the "Chronicle," reported from Northern France on October 30th as follows:—"The enemy's aeroplanes are active in this neighbourhood. Yesterday and to-day 'Taubes' have paid visits to Hazebrouck, and have been dropping bombs. The first two instalments—three in all—did not kill or injure anyone and achieved no great material damage. The airmen's efforts were evidently directed against the railway line, but their attempts to interrupt communication failed. All the bombs fell 'wide.'

"A little more than an hour ago I saw a third German aeroplane pass over the town, flying at a considerable height. No bombs were thrown from it, and for more than five minutes it had to 'run the gauntlet,' hundreds of shots being sent up after it. It was, however, too high for the fire to be effective. Some time previously it had been observed by British airmen,

and an aeroplane had started in pursuit. As they passed over the town both were going full speed ahead, and in the gathering twilight it was possible to note that the British craft was gaining.

"As I watched through my glasses I heard a faint rattle; the pursuer had got within range of the 'Taube' and was firing upon it. The German airship (sic) seemed to sludder for a moment, slacken speed, and, like a winged bird, skim downwards. But then the twilight and the distance swallowed up pursuer and pursued, though I think that there could be no doubt as to the result of the encounter. No sooner had the two aircraft disappeared than a bomb fell about a hundred yards from where I was standing. The 'Taube' from which it was thrown was travelling above the clouds and could not be seen. Again no damage was done."

It is reported that early last week the inhabitants of Reims were treated to a battle in the air between a French monoplane and a German biplane. The Frenchman had the advantage in height, had got about 100 ft. almost immediately above the enemy, and opened fire with a rifle. The German executed such a steep vol plané as almost to amount to a vol piqué, and the spectators thought that he had been struck, but, after descending some hundreds of feet, he resumed a more horizontal course in the direction of the German lines, which were only two miles off. It was afterwards rumoured that he had been captured, but it seemed hardly likely, in view of the proximity of the German lines. The steep descent was merely a manoeuvre to elude his opponent.

GERMANY.

From the German official wireless news:—

"A Zeppelin is reported to have flown over Paris on Wednesday, dropping bombs which did great damage. According to the 'Frankfurter Zeitung,' eight persons were killed and many injured. French airmen endeavoured in vain to attack the German aircraft.

"The inhabitants of London are leaving the capital for Scotland through fear of German airships."

[Our Press Bureau has no confirmation of these statements.—Ed.]

It is reported in the "Express" that the Germans are hurrying on the construction of airship sheds off Emden Harbour. One shed will contain two Zeppelins, while another is being built to contain two dirigibles of other types. [Emden Harbour should be a nice handy place for a raid by some of our seaplanes, but it will be better to wait till there are some airships in the sheds, so as not to waste good bombs.—Ed.]

The British General Staff is reported to have secured possession of one of the enemy's General Headquarters Orders issued to German commanders in the field enjoining greater precaution against the Allies' aeroplanes; the order, signed by General von Bergmann, reads as follows:—"According to the report of a squadron of aeroplane observers, our troops are very easy to mark in fighting, in spite of their grey uniform, because of the density of their formation, while the French know, apparently, how to protect themselves perfectly against aerial reconnaissances. During a fight it is necessary that our troops should make the task of aerial reconnaissance more difficult by more careful use of the country—making use of narrow files among trees, edges of villages, the shelter of houses, avoiding mass formations; above all, absolute stillness in exposed places. At the approach of an aeroplane all movement ought to cease. It is necessary to assimilate the coverings of artillery to the surrounding ground, not only in front, but also against the view from above. Avoid all movement of batteries as soon as an aeroplane surveys the position; a single man in movement will betray a battery. Upon the approach of an enemy aeroplane there should be no firing, for the flash of the gun betrays the position from afar. To satisfy themselves regarding the visibility of their positions, the commandants of brigades, regiments, or groups of artillery will find the air squadrons willing to make flights of ten to twenty minutes' duration in order that they may survey their own positions. The fact should be noted that in a first flight an observer does not see very much. The advice of the airmen should be taken as to the best manner in which to conceal positions. The success of the French artillery, which has caused such marked losses, is due, in the first place, to the fact that the French are more often able than us to

determine the positions of batteries. To equal them it is necessary that our observations should be pushed, like theirs, far in advance of the lines, even if that should render it impossible to direct the fire of batteries by the voice. Above all, reconnaissances of the enemy's batteries should be made at all cost by men of good courage, who will slip across the lines of the sharpshooters of the enemy to points which will permit of distant views."

The following description of the German method of ranging with high-angle guns is reported:—From one corner of a triangle below the aeroplane comes a shell which bursts with a puff of red smoke, which falls short. A second gunner has seen the red smoke, and aims a couple of hundred feet higher. His shell bursts in a cloud of black smoke at the right altitude, but too far to the left. A third shell, giving white smoke, corrects both errors, and arrives unpleasantly near. The red gun now takes up the tale, guided by the white explosion, and so on. [The method sounds all right, but against a fast and handy machine like a "scout" it does not seem likely to be highly effective unless the pilot is foolish enough to keep a fixed altitude and direction.—Ed.]

The following paragraph from the "Times" of November 2nd shows how the Germans plagiarise all our best stories:—

"The description in German newspapers of the bravery of one of the crew of a Zeppelin contains some interesting details. It is said that the same ship with the same crew took part in the bombardment of Liège, Namur, and Antwerp. During one of its last cruises the airship came within the range of a searchlight and was at once exposed to heavy fire. A shell smashed the framework of one of the screws, and the screw was so bent that it endangered the motors. At the same time, the envelope was badly torn and thus caused great resistance to the wind. An engineer named Luickhardt succeeded in climbing along outside the ship and repairing all the damage."

Of course, the first propeller-change in mid-air was done on our Naval Airship IV (the Parseval) over the Chânnel.

The "Daily Chronicle" Swiss correspondent, Mr. Alan Bott, reported from Lake Constance last week as follows:—"The statement that the new Zeppelins, said to be destined for a raid on London, have aluminium covers as a protection for the envelope against bombs and shells is incorrect. In regard to the two airships now completing at Friedrichshafen I learn that several experiments have been made with various substances, but so far these efforts to make the Zeppelins bomb-proof have been unsuccessful. If Count Zeppelin persists in his determination to find a suitable cover, his new treasures at Friedrichshafen may not be ready for another three or four weeks."

[The above statement is very entertaining, but if Count Zeppelin is really trying to invent a bomb-proof airship fabric the said "treasures" may not be ready till the next millennium or even the next but one.—Ed.]

RUSSIA.

The following extract from an article by Lieut.-Col. Roustam Bek in the "Express" is of particular interest:—"I have already mentioned in my former articles that the German cavalry is very weak in the matter of reconnoitring, and all German reconnaissance rests on their flying corps, which is on a high level of efficiency. It would, of course, be very dangerous at the moment of the development of the general attack by the opposing army. But the Russians, knowing this, begin their attacks always at night, quite nullifying any usefulness of the German flying corps. The Germans did not expect such a trick on the part of the Russians, and persisted in sending up aeroplanes and airships with searchlights, which made only a good mark for special guns, which almost invariably brought them down."

The "Morning Post" correspondent at Petrograd reports:—"Apart from the very widespread billsticking business which the German aeroplanes so energetically carried on by dropping proclamations in bad Russian all over the western parts of Poland, the only results credited to the German masters of the air are fourteen bombs dropped over Warsaw. Two of them altogether failed to explode. The other dozen inflicted the following damage, absolutely futile from the military point of view, and without any effect as a scare, even on the civil population. One fell in a street frequented for evening pro-

menades, hit the corner of the house occupied by a popular café, and did no harm whatever, notwithstanding the crowded state of the street. Another fell in a municipal garden space which is closed in the evening, and was therefore empty at the time. Two fell in the Jewish quarter, one in the courtyard of the Jewish hospital. The others were dropped in the neighbourhood of the railway station and the field beyond. The total score for fourteen bombs dropped during a flight of an hour and a half by several aeroplanes was seven killed and forty-six wounded. The populace, unscared, joked about the German bombs as being a characteristic form of German greeting, but the missiles were finally called in derision Germany's 'pour prendre congé' cards."

ITALY.

News from the Adriatic comes in daily to the effect that the Austrian aeroplanes are carrying mitrailleuses and using them on anything they come across, presumably for practice.

From a "daily," usually the only one in this country sporting information about things aerial in correct technical terms, I learn that the Great New Fleet of Zeppelins is busy on Lake Constance—at Friedrichshaven?—practising on a fleet of giant rafts, on which they inflict, usually, frightful havoc with their bombs. The news reports itself as coming from the poor fishermen of the district, whose sport and daily bread are suffering badly from the noise. No one seems yet to have protested on the part of the fish, which provides another chance for the kindhearted to do something.

Possibly you have heard of the big aerial "Dreadnought" which was started by a pupil of Sikorski, by name Stiansny, at Prague some long time back, and has just now been tried and found direfully wanting—apparently in motor-power; 200 h.p. is asked to carry 1,600 litres, say 300 gallons of spirit, plus lubricant and instruments of destruction and the indispensable rest, but did not seem to care about doing it. At the very beginning of the first attempt to "taxi" the machine turned over after that the landing arrangements had given up trying to do their duty. The inventor was, however, not very much damaged. Perhaps more may happen next time.

A friend who is staying at Turin reports that the aeroplanes there are getting a horrid nuisance. No peace, no sleep. It must be the civilian element, as she never criticises The Others now.

Dr. Gobbi would like to give all our naval men a nice lifebelt, but cannot afford to. Perhaps the British Government could?

I hear that P. 4, of which we have heard so little lately since she has been quartered at Campalto, left that place and travelled to Verona and back without incident and fairly quickly on October 23rd. There are no doubt good reasons why we have heard little of her since she went to stay at Venice-Campalto.—T. S. HARVEY.

BELGIUM.

A telegram from Breskens, Holland, states that on October 31st an aeroplane was seen near the Belgian-Dutch frontier dropping bombs. It was pursued by a Taube, and both disappeared in a south-westerly direction. Some time later other aeroplanes were seen.

A correspondent of the "Times" reported on a censored date last week:—"I had the good fortune to be allowed to make an ascent in a captive balloon which had been sent up above the dunes. The officer whom I accompanied was engaged in making observations with a view to discovering the position of the German batteries. At a height of about 200 feet we could follow all the phases of the battle which was in progress along the other bank of the Yser, between Nieupoort and Dixmude. In particular, we were able to note the effect of the fire of the British warships off the coast. At 8 a.m. the engagement was in full swing, and as the air was clear I had a splendid view of what was going on. At 8.45 the observation-officer discovered the position of the German guns, and so we at once came down."

Mr. C. E. Trip, of the "Daily Chronicle," at Amsterdam, narrates how a Belgian railway servant who possessed keys of certain rooms in the Central Station, Antwerp, reported that the station was packed with German war stores, including a quantity of aeroplane parts "in the building." Wonderful stories these "specials" do get hold of!

The "Morning Post" correspondent in Belgium, commenting

on the German Army in general, delivers himself as follows:—"In regard to minor points, the German air work was far better than was expected in the absence of any special advertisement of her airmen before the war. Her aeroplane proved a very good, very serviceable model, and the aeronauts were, it seemed, standardised. A Taube could always be relied upon for about the same speed and daring."

[It is pitiful that such ignorance should be displayed by an alleged war correspondent. German aviators beat practically all the World's Records before the War. German officers competed in and won sporting events organised on a scale unapproached in any other country, and carried out combined manoeuvres of equal importance. Also, it is absurd to write of "a model" as if German machines were all standardised. Every promising type was officially encouraged. Hence, the German superiority in aircraft over any one other nation.—Ed.]

Mr. Alfred Stead of the "Express" reported on October 2nd, as follows:

"Near Ramscapelle [excision] a deserted aeroplane was found in a field. There was no trace of an officer or observer. English maps were found in the machine, and there is a great mystery about it. If it were a British machine, why should the occupants not remain? If a German, what had become of them? Probably it will be possible to identify the aeroplane soon. [A strange commentary on the intelligence of the finders of the machine. Probably the crew had gone off for lunch, or to fetch petrol.—Ed.]

"Meanwhile aeroplanes have been practising dropping bombs on the beach near Dunkirk, which alarmed the inhabitants somewhat, it being at first believed that the Germans were at their usual game. To-day in Ypres four bombs were thrown from a Taube, but no damage was done."

Mr. René H. Feibelman, cabling from the Hague on November 1st, says:—"The British aviators have once more done valuable work. Two aeroplanes paid a visit last night to the German camp which has been established at Lichtervelde, where it was known that vast quantities of ammunition had been stored. Bombs which were dropped on the German magazines caused the explosion of a considerable number of cartridges, and a rifle depot close by was set on fire. Three sentries on duty near the ammunition reserves were killed, and the railway line between Lichtervelde and the German fighting base was wrecked in two places, thus making it impossible for the enemy to get his munitions quickly to the front until the damage was repaired."

Mr. Percival Phillips, the "Express" correspondent on the Belgian frontier, reported on November 1st that the German fear of a new attack from the seaward side is evidenced by the increased surveillance exercised from Zeebrugge by the aeroplanes which patrol the Channel.

"A Taube flew over the Allies' lines from Heyst yesterday morning and brought about a thrilling battle in the air, in which four aeroplanes belonging to the Allies participated. The latter chased the German machine towards the base and attempted to encircle it near Blankenberghe. The Taube then flew towards the Channel in its efforts to escape its pursuers, and was seen to exchange revolver shots with aviators of the Allies. Finally, the Taube succeeded in eluding capture, but its erratic movements before its disappearance behind a cloud bank suggested that it had at least been partially disabled.

"The Allies' aerial fleet then turned its attention to the Zeppelin from Brussels, which has been employed for two days in sailing above the Channel and signalling the movements of the attacking British fleet. The Zeppelin witnessed the battle in the air, but made no attempt to participate in it, and when the hostile fleet circled near, the airship also disappeared in the clouds. There have been several similar encounters between the opposing aeroplanes along the Channel, and the Taubes have invariably been chased away. The high winds now prevailing render Zeppelin manoeuvres increasingly dangerous." [This report is, presumably, given from hearsay evidence, for our aviators still say they have never seen a Zeppelin or an airship of any kind. Presumably the machine was a captive balloon which was hauled down when the aeroplanes appeared.—Ed.]

The "Times" correspondent in Holland reported in that paper on October 20th as follows:—

"The enemy have undertaken works of which the object evidently is to impress the inhabitants and to make them believe that the German domination of the city will be of long duration. They have doubled the size of the enormous shed which formerly gave shelter to the few Belgian dirigibles known to us in the manœuvring ground at Etterbeek, in front of the cavalry barracks. Gigantic pieces of ironwork make it clear to us what are to be the proportions of the new sheds, which are to house Zeppelins. On the aviation ground at Berchem-Sainte Agathe, which is jealously enclosed and strongly guarded, work is going on without respite, and at night-time from this part of the western side of Brussels the sky can be seen glowing as if all the forges of Vulcan were at work in the enclosure. That is where the 'Taube' aircraft are to be seen—the machines which make reconnaissances, always equipped with weapons of incendiary and destruction."

[To this one may add that the shed referred to used to house a little airship about the size of the "Gamma"—since deceased—and that if it were doubled in size it might, with care, hold a Parseval. However, it is big enough to be a useful target for our bombs. The all-night work at Berchem apparently indicates that the German aircraft are being over-worked and need a great deal of repairing.—Ed.]

Mr. Edgar Rowan delivers himself in the "Chronicle" of October 29th as follows:—"Near Ostend the Germans are said to have erected a gigantic tent of fireproof canvas as a garage for airships. In connection with this report should be read the news from Hasselt that between Sunday noon and Monday evening seven Zeppelins passed westward. Hasselt lies on a straight line drawn from Dusseldorf or Cologne to the Belgian coast."

[An excellent example of how rumours arise. The "gigantic tent" is probably an ordinary marquee for aeroplanes, such as we used on manœuvres. As to the "seven Zeppelins," it will be remembered that six Zeppelins were reported to have bombarded Antwerp, when, in fact, not a single airship of any kind has been seen in Belgium by any of our aviators.—Ed.]

TURKEY.

It has been reported from Constantinople that the Turkish hydro-aeroplane school at San Stefano, founded by the Minister of Marine, has trained several pilots to a high state of efficiency during the last few months, and that these fliers have made some successful cruises across the Sea of Marmora.

MONTENEGRO.

Constant use is made of aeroplanes by the Austrians with the object of searching out the Montenegrin positions and directing the aim of the Austrian gunners. So far, however, no great amount of damage has been caused.

Home Comforts.

A sympathetic young lady, touched by the appeal for home comforts for the R.F.C., has perpetrated the following verses: Of course, we've all read recently a wistful, sad appeal, It touches heart and pocket, 'ere we realise we feel A mad desire and longing to give all our coin, and more, To furnish "wool" for little lambs in the Royal Flying Corps.

Now, we are told for poor shorn lambs the Lord sends temperature

As He considers fit for them; with efforts immature To act the part of Providence, we'll try to do our share And send out nice warm woolly things—for "autumn's in the air!"

We'll forward socks by dozens—they must never have cold feet,—

And mufflers, too, and mittens,—so just make a set complete: And cigarettes each one will like, the subtle scents remind him Of home and (let me whisper it) the girl he left behind him.

And most unnatural would it be, a lamb without mint sauce, So when these lambs skip o'er the clouds they often have recourse

To browsing on confection'ry well steeped in peppermint. A curious taste, but let us, pray, supply it without stint.

F. E. B.

[Let us hope this will remind some people that they have not yet sent their contributions.—Ed.]

GERMAN AVIATION LOSSES.

Mr. Erik Hildesheim, the Danish Correspondent of THE AEROPLANE, whose articles, written in his own distinctive style, have told us so much of what other nations say and think about aviation, gives this week a list of Germany's losses in aviators up to about the end of September. The killed include several of the very best German military aviators, and though one regrets the deaths of pilots whom one knows to be in many cases gentlemen and sportsmen, one cannot help feeling satisfaction at the number of officially admitted casualties compared with the slight losses of the R.F.C. up to this date; 17 pilots killed, 11 wounded, and three missing is a fairly heavy list for six weeks of war, as against ours in the same period.

The Zeppelin Bluff.

The promised Zeppelin raid was referred to in the opening of the court martial on the alleged German spy, Lody, last week. Mr. Bodkin pointed out that Lody wrote in one of his captured letters: "Everyone speaks of the bombardment of London by Zeppelins. All the important buildings are accordingly protected by strong wire nets. I mentioned this already in my report from London of 16-9."

Those of us who go round London gazing skyward looking for aircraft, and the reception prepared for them, have not noticed these nets, though, curiously enough, someone or other suggested precisely this method of protection to the writer last week, before the Lody case started. It strikes one that a bomb-proof net would be a trifle heavy and awkward to fix, and that anyhow it would probably be useless, because if strong enough to take the weight of a bomb it would fracture and fly in all directions if a bomb burst on it.

A far better suggestion is that the top floors of all the important buildings which are likely to be assaulted should be used as barracks for German prisoners, who must by now be feeling the cold in their tents in the concentration camps. In this way they would be comfortably housed, and would form a useful buffer for their betters, in case of an air raid.

To the making of these ingenious suggestions there is no end. One genius suggests that in wet weather the pavement of Trafalgar Square shines like a lake, and that the proper thing to do is to sow it with grass-seed, which, if kept wet, would grow like the grass hair on those funny little earthenware pigs, or human heads, and so the Square might be mistaken for the Green Park on a moonlight night. As an alternative he suggests flooding it, and pretending it is the Round Pond in Kensington Gardens.

Another gentleman, suffering from a brain-wave, argues that the glass top and sides of H.M.S. "Crystal Palace" reflect moonlight, and that on dark nights the internal lighting indicates its position, so that it acts as a permanent landmark. Therefore he suggests that it should be covered with treacle, so that it would collect London smuts and become opaque and non-reflecting—an excellent idea, only someone must invent an insoluble treacle for these wet days.

Anti-Aircraft Insurance.

It is stated in the "Express" that a large amount of insurance against damage by hostile aircraft continues to be effected. Rates on ordinary house property average 5s. per cent. in the inner circles of London and 2s. 6d. in outer districts, while on docks and property stored there the rate is 20s. Insurances for £100,000 and still larger sums are frequent. Queen Alexandra's wardrobe and valuables at Sandringham and Marlborough House have been insured for £60,000 at 5s. per cent. It has also been stated in the "Express" that Westminster Abbey has been insured for a large sum.

Workers O.H.M.S.

Other readers of THE AEROPLANE, who are employed in various aircraft works, write complaining of the annoyance they receive from self-appointed recruiting agents, and one hopes that the S.M.M. and T. will seriously consider the question of issuing a badge to the employees of firms concerned in the motor industry generally who are employed on Government work. Such badges have already been sanctioned by the War Office, and are worn by the employees of the Bristol Co., the badge bearing a pair of wings with O.H.M.S.

R.N.A.S. Comforts.

The R.N.A.S. Comforts Fund shows satisfactory progress. £25 13s. 4d. from the Sopwith Co. is a good lead to other and larger firms. One hopes that the R.F.C. funds are being equally well supported by members of the firms who are making military aeroplanes.

The following are the subscriptions in cash during the past week:—Employees of Sopwith Co., £13 3s. 4d.; Directors of Sopwith Co., £12 10s.; Mr. Pawson, £5; Anon, £2 2s.; Mrs. H. E. Acklon, £1; Miss W. Parke, 10s.; Mr. H. Hall, 9s.; Vickers Mechanics (3rd sub.), 7s. 6d.; Mr. Bass Sutton, 5s.; "Carmarthen," 5s.; Miss Terry, 2s. 6d.; Mr. Sewell, 1s. Total, £35 15s. 4d. Making, with the previous cash subscriptions, a total to November 2nd, of £91 4s. 4d.

In addition, there have been large contributions in kind. Five cases have already been sent off by Mrs. Sueter. Three cases have been safely received by Commander Samson, D.S.O., who wrote from Northern France: "Dear Mrs. Sueter, Your kind gifts are very much appreciated by everybody. They are just the things required. Everybody is extremely grateful." Major Gordon, R.M.L.I., commanding the Northern Section of the R.N.A.S. Coast Defence System, also writes from Scotland, saying how welcome the warm garments are there. This news will be welcome to those who have already sent an instalment of "woolly things."

Still more contributions in cash and kind are needed, urgently, and at once, so will readers please send immediately all they can to Mrs. Murray F. Sueter, The Howe, Watlington, Oxon?

Changes of Occupation.

M. Coanda, who has for some years been associated with the British and Colonial Aeroplane Co., and has produced during that period a number of very notable novelties in aeroplane design, has left that firm and is now on his way to Roumania. M. Coanda's father, General Coanda, was formerly Roumanian Minister of War, and naturally M. Coanda's knowledge of aeroplanes will be of great value to his own country should it eventually be dragged into the war.

Mr. Farnall Thurstan, who is well known to everyone concerned with aviation practically all over the world, thanks to the thoroughness with which he has introduced the Bristol firm's products to the military authorities of every nation worth counting, has also resigned his position with that firm. One hopes to hear of him soon in the King's service, for his knowledge of all kinds of aircraft, and his ability and resource under strange circumstances all over the globe, should make him very valuable. It will be remembered that he has already done good service in the war by securing a large consignment of Gnome and Renault engines and getting them through to Farnborough at a period when there was undoubtedly a shortage of motors and we were not in a position to supply any of our own make.

From Denmark.

The following interesting notes by Mr. Erik Hildesheim give information which should be suggestive of thought:—

The Swedish steamer "Runa" of Gotenborg has, on a voyage in the Baltic Ocean, rescued a German hydro-aeroplane and its crew, aviator and observer, near the German coast and brought both machine and men to Travemünde. The breakdown had occurred on a patrol flight owing to an engine failure, and the airmen were much fatigued by almost 24 hours' stay on the ocean.

The Germany Ministry of War has established a "Zentralstelle" to receive wishes and advices from aeronautical circles for acceleration of the production of aeroplanes and aero engines. [This is a thoroughly sound idea. The British War Office, on the other hand, depends for advice on its paid civilian "experts," whose theories outweigh the advice of practical men till time proves theory wrong.—Ed.]

The German aero paper, "Flugsport," of September 30th, contains the list of those granted the Iron Cross for aerial exploit. It runs:—Count Schall, Majors von Loeben and Siegert, the officers Pohl, Blum, von Jena, Scholl and Gurditz, Rittmeister Count von Wolfskeel, Oberlieutenants Kurt Muller, Saenger, Hahn, Bremer, Peter, Keller, Schlag, Leon König, Haberl, Heymann, Fischach, Schäfer, Lieutenants Baas, Hug, Fricke, Schevermann, Scherkamp, Krug, Loeser, Bonde, Floeck, Aschenborn, Habler, and von Ruville, Vizefeldbebel Reichert, Sub-Lieuts. Seel and Kahl, and the voluntary aviators Friedrich, Diemer, Schroeder, von Teubern and Brandt.

The following is the aerial casualty list:—Feldfliegertruppe (that is company of officer-pilots with superior military brevets). Killed:—Oberlieutenant Jahnov, Lieut. Koch, Capt. Kereksick, Lieut. Giesche, Lieut. von Gronau, Oberlieut. Dalwig, Sergeant Ramin, Sub-Lieut. Tiemann, Gefreiter Moser, Aviator Hartmann, Musketeer Schaper, Reservist Hanne. Wounded:—Lieut. Stoewer, Lieut. Wentscher. Oberlieut. Student, Sergt. Muller, Aviator Siegert, Aviator Seyfert, Aviator Schamari, Aviator Leissmann, Oberlieut. Reinhold, Lieut. von der Oelsnitz, Lieut. Jungling. Missing:—Lieut. Holtzmann, Lieut. Kleber, Sub-Lieut. Neufeld.

Reserve-aviator Trautwein was also killed.

Since the issue of the above list have been killed later on:—Oberlieut. Werner von Beaulieu, who gained his biplane Diplom No. 291 in September, 1912, on a Bristol, and Diplom No. 331 in November of the same year on the Bristol monoplane. Von Beaulieu made his name known by his performances in this year's Prince Henry Flight, gaining 2nd prize.

Oberlieut. Neumann and Lieut. Furstenuau, both belonging to the 24th Saxia Feldflieger department, have been killed in a patrol flight.

Oberlieutenant Carganico has been killed. He was one of



PILOTS IN THE MAKING.—The Beatty School. Mr. Roche-Kelly at the wheel, and Mr. Beatty in the Coat.

Germany's best-known Army pilots, had made numerous overland flights, and won the 5th prize in Prince Henry Flight, 1913, while he met with an accident at the beginning of this year's Prince Henry Flight.

The rumour in the newspapers of Lieutenant von Hiddesen having been taken prisoner is denied.

New Aviators.

The following aviators' certificates have been granted by the Royal Aero Club since the last list was published in this paper. Compared with our losses in the same period, seven deaths in all, it does not seem as if we shall run short of pilots:—

855, Air Mechanic Victor Clarence Judge, R.F.C. (Maurice Farman biplane, Central Flying School, Upavon), July 21st, 1914; 856, Frances Alec Arcier (Caudron biplane, Hall School, Hendon), July 28th, 1914; 857, Lieut. George Aubrey Kennedy Lawrence, R.F.A. (Bristol biplane, Bristol School, Brooklands), July 28th, 1914; 858, Lieut. Edgar Ralph Coles (Bristol biplane, Bristol School, Brooklands), July 28th, 1914; 859, Albert Throne Crick (Blériot Monoplane, Blériot School, Brooklands), July 29th, 1914; 860, Lieut. James Donald Gerhardt Sanders, R.F.A. (Bristol biplane, Bristol School, Brooklands), July 30th, 1914; 861, Flight-Sergt. Hugh McGrane, R.F.C. (Maurice Farman biplane, Central Flying School, Upavon), July 30th, 1914.

862, Sergt.-Maj. Frederick Henry Unwin (Maurice Farman biplane, Royal Flying Corps, Netheravon), August 3rd, 1914; 863, Sergt. Alfred Robert May (Maurice Farman biplane, Royal Flying Corps, Netheravon), August 4th, 1914; 864, Sergt. Frank James, R.F.C. (Maurice Farman biplane, Central Flying School, Upavon), July 28th, 1914; 865, Graham Weir (Bristol biplane, Bristol School, Brooklands), August 10th, 1914; 866, William Mortimer-Phelan (Henri Farman type biplane, Pashley Bros., Shoreham), August 9th, 1914; 867, Flight Sub-Lieut. Norman Sholto Douglas, R.N.A.S. (Bristol biplane, Bristol School, Brooklands), August 11th, 1914; 868, Frederick Whittington Gamwell (Bristol biplane, Bristol School, Brooklands), August 15th, 1914; 869, Lionel Seymour Collins (Bristol biplane, Bristol School, Brooklands), August 15th, 1914; 870, Lieut. Evelyn Paget Graves, R.F.A. (Maurice Farman biplane, Central Flying School, Upavon), August 18th, 1914; 871, George Llewellyn Pitt (Blériot monoplane, Blériot School, Brooklands), August 19th, 1914; 872, Eric Barton Palmer (Grahame-White biplane, Grahame-White School, Hendon), August 20th, 1914; 873, Gordon Lindsay Thomson (Bristol biplane, Bristol School, Brooklands), August 20th, 1914; 874, Francis Thomas Courtney (Grahame-White biplane, Grahame-White School, Hendon), August 20th, 1914; 875, Flight Sub-Lieut. William Hayland Wilson, R.N.A.S. (Bristol biplane, Bristol School, Brooklands), August 21st, 1914; 876, Flight Sub-Lieut. Anthony Rex Arnold, R.N.A.S. (Maurice Farman biplane, Central Flying School, Upavon), August 21st, 1914; 877, Sub-Lieut. Arthur Lorne Nickerson, R.N. (Bristol biplane, Bristol School, Brooklands), August 22nd, 1914; 878, Engine Room Artificer John Watson Jean, R.N. (Maurice Farman biplane, Central Flying School, Upavon), August 19th, 1914; 879, Flight Sub-Lieut. James Douglas Maude, R.N. (Maurice Farman biplane, Central Flying School Upavon), August 19th, 1914; 880, Richard Cecil Hardstaff (E.A.C. biplane, Eastbourne School, Eastbourne), August 20th, 1914; 881 (hydro-aeroplane), Petchell Burrst Murray (Lakes hydro-biplane, Lakes Flying School, Windermere), August 21st, 1914; 882, William Orchard Shor Purnell (Henri Farman type biplane, Pashley School, Shoreham), August 21st, 1914; 883, Master Mariner Richard Upton (Grahame-White biplane, Grahame-White School, Hendon), August 26th, 1914; 884, Lieut. John Lawson Kinnear (The King's Regiment) (Maurice Farman biplane, Central Flying School, Upavon), August 31st, 1914; 885, Second Lieut. Derick Robertson Aikman, R.F.C. (S. R.) (Maurice Farman biplane, Central Flying School, Netheravon), September 1st, 1914; 886, Lieut. Charles Carleton Barry (3rd Leinster Regt.) (Maurice Farman biplane, Central Flying School, Netheravon), September 2nd, 1914; 887, Lieut. Edgar Ramsey Ludlow-Hewitt (Royal Irish Rifles) (Maurice Farman biplane, Upavon), August 19th, 1914; 888, Felix Ruffi (Wright biplane,

Beatty School, Hendon), August 29th, 1914 (Subject to permission of Aero-Club de France); 889, Elmer Peter Roberts (Henri Farman type biplane, Pashley School, Shoreham), August 29th, 1914; 890, Andrew Y. K. R. Cheung (Chinese Subject) (Wright biplane, Beatty School, Hendon), August 31st, 1914.

891, Capt. Oliver Nash Moriarty (Antrim R.G.A., S.R.), (Maurice Farman biplane, Netheravon), September 2nd, 1914; 892, Capt. Andrew Adolphus Walser (London Regt.) (Maurice Farman biplane, Netheravon), September 2nd, 1914; 893, Lieut. Jocelyn Morton Lucas (4th Royal Warwickshire Regt.) (Maurice Farman biplane, Netheravon), September 3rd, 1914; 894, Lieut. William Adam Sedgwick Rough (Maurice Farman biplane, Netheravon), September 3rd, 1914; 895, Capt. Cecil Harry Wolff (Bedfordshire Regt.) (Maurice Farman biplane, Netheravon), September 4th, 1914; 896, Second-Lieut. John Reginald Howett, R.F.C. (Grahame-White biplane, Grahame-White School, Hendon), September 8th, 1914; 897, Capt. Arthur Douglas Gaye (Avro biplane, Central Flying School, Upavon), September 8th, 1914; 898, Cyril Marconi Crowe (Grahame-White biplane, Grahame-White School, Hendon), September 8th, 1914; 899, Flight Sub-Lieut. Ralph Whitehead, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), September 8th, 1914; 900, Flight Sub-Lieut. Ralph James Hope-Vere, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), September 9th, 1914.

901, William Roche Kelly (Wright biplane, Beatty School, Hendon), September 9th, 1914; 902, Charles Henry Butler (Henri Farman type biplane, Pashley School, Shoreham), September 6th, 1914; 903, Corporal Frederick Adams, R.F.C. (Maurice Farman biplane, Central Flying School, Upavon), August 20th, 1914; 904, Lieut. Henry Graham Lambarde Mayne (K.O.S.B.) (Avro biplane, Central Flying School, Upavon), September 9th, 1914; 905, Robert Maxwell Pike (Bristol biplane, Military School, Brooklands), September 21st, 1914; 906, Flight Sub-Lieut. the Hon. Desmond O'Brien, R.N.A.S. (Maurice Farman biplane, Central Flying School, Upavon), September 21st, 1914; 907, Flight Sub-Lieut. Philip Leslie Holmes, R.N.A.S. (Avro biplane, Central Flying School, Upavon), September 21st, 1914; 908, John Callaghan Brooke (Blériot monoplane, Military School, Brooklands), September 21st, 1914; 909, Claude Francis Strickland, I.C.S. (Grahame-White biplane, Grahame-White School, Hendon), September 22nd, 1914; 910, James Gordon McKinley (Blériot monoplane, Military School, Brooklands), September 22nd, 1914.

911, Flight Sub-Lieut. Bernard Crossley Meates, R.N.A.S. (Maurice Farman biplane, Central Flying School, Upavon), September 23rd, 1914; 912, Harry O'Hagan (Blériot monoplane, Military School, Brooklands), September 23rd, 1914; 913, Oswald Mansell Moullin (Bristol biplane, Military School, Brooklands), September 24th, 1914; 914, 2nd Lieut. Frederick William Polehampton (14th Cavalry Reserve, 15th Hussars) (Grahame-White biplane, Grahame-White School, Hendon), September 27th, 1914; 915, Reginald Lord (Wright biplane, Beatty School, Hendon), September 27th, 1914; 916, Flight Sub-Lieut. Maurice Arthur Haines, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), September 30th, 1914; 917, Flight Sub-Lieut. Harold Rosher, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), September 30th, 1914; 918, Gerald Charles Ross Mumby (Grahame-White biplane, Grahame-White School, Hendon), October 1st, 1914; 919, Flight Sub-Lieut. Francis Warrington-Strong, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), October 2nd, 1914; 920, Lieut. Arthur Bracton Bagley (Royal Dublin Fusiliers) (Maurice Farman biplane, Central Flying School, Upavon), October 2nd, 1914.

921, Capt. Harold Wyllie (6th Hampshire (Cyclist) Battalion) (Maurice Farman biplane, Royal Flying Corps, Netheravon), September 1st, 1914; 922, 2nd Lieut. William Francis Forbes Sempill, R.F.C. (Maurice Farman biplane, Central Flying School, Upavon), September 20th, 1914; 923, Charles Henry Chichester Smith (Wright biplane, Beatty School, Hendon), October 2nd, 1914; 924, Lieut. Eric Walker (6th Battalion Border Regiment) (Maurice Farman biplane, Military School, Brooklands), October 4th, 1914; 925, Flight Sub-Lieut. Philip Charles Vere Perry, R.N.A.S. (Grahame-White biplane, Gra-

hame-White School, Hendon), October 5th, 1914; 926, Thomas Walker Abbott (Caudron biplane, British Caudron School, Hendon), October 7th, 1914; 927, Peter Legh (Caudron biplane, British Caudron School, Hendon), October 8th, 1914; 928, Malcolm McBean Bell-Irving (Maurice Farman biplane, Military School, Brooklands), October 9th, 1914; 929, George Crossfield Norris Nicholson (Maurice Farman biplane, Military School, Brooklands), October 9th, 1914; 930, Donald Campbell MacLachlan (Wright biplane, Beatty School, Hendon), October 9th, 1914.

931, Beaufoi John Moore (Maurice Farman biplane, Military School, Brooklands), October 10th, 1914; 932, Rupert Forbes-Bentley (Wright biplane, Beatty School, Hendon, October 8th, 1914; 933, Flight Sub-Lieut. Edwin Roland Moon, R.N.A.S. (Caudron biplane, British Caudron School, Hendon), October 10th, 1914; 934, Flight Sub-Lieut. Kenneth Stevens Savory, R.N.A.S. (Maurice Farman biplane, Royal Flying Corps, Netheravon), September 29th, 1914; 935, Flight Sub-Lieut. David Keith Johnston, R.N.A.S. (Maurice Farman biplane, Royal Flying Corps, Netheravon), October 1st, 1914; 936, Flight Sub-Lieut. Vincent Nicholl, R.N.A.S. (E.A.C. biplane, Eastbourne School, Eastbourne), October 8th, 1914; 937, Flight Sub-Lieut. Francis Gilmer Tempest Dawson, R.N.A.S. (E.A.C. biplane, Eastbourne School, Eastbourne), October 8th, 1914; 938, Flight Sub-Lieut. Maurice Edward Arthur Wright, R.N.A.S. (E.A.C. biplane, Eastbourne School, Eastbourne), October 8th, 1914; 939, Flight Sub-Lieut. Edward Gordon Riggall, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), October 11th, 1914; 940, Ormond George Hake (Maurice Farman biplane, Military School, Brooklands), October 15th, 1914.

941, Capt. Thomas Walter Colby Carthew (4th Bedfordshire Regiment) (Maurice Farman biplane, Central Flying School, Netheravon), October 16th, 1914; 942, Flight Sub-Lieut. John Joseph Petre, R.N.A.S. (E.A.C. biplane, Eastbourne School, Eastbourne), October 14th, 1914; 943, Alexander Burnell Rendall (Maurice Farman biplane, Military School, Brooklands), October 19th, 1914; 944, 2nd Lieut. Cecil Harlowe Saunders, R.F.C. (Maurice Farman biplane, Central Flying School, Upavon), October 21st, 1914; 945, Flight Sub-Lieut. Arthur Ethelbert Griffin, R.N.A.S. (Maurice Farman biplane, Central Flying School, Upavon), October 21st, 1914. American certificate—307, Griffith Brewer (Wright biplane, Wright Station, Dayton, Ohio), August 15th, 1914.

Contraband.

A supplement to the "London Gazette" of October '27th contains a proclamation furnishing revised schedules of absolute and conditional contraband. Among the articles which have been made absolute contraband appear under Section 22:—"Aeroplanes, airships, balloons, and aircraft of all kinds, and their component parts, together with accessories and articles recognisable as intended for use in connection with balloons and aircraft."

It is, however, probable that any firm not actually engaged on Government orders might obtain permission to export air-

craft or parts thereof to our Allies, or even to certain approved neutral Powers.

The Southampton Fatality.

A fatal accident occurred near Southampton early last Sunday morning, particulars of which are difficult to obtain. A seaplane, just completed at Woolston, was having its first test, when something went wrong and it dived into Southampton Water. The passenger, a mechanic named Alston, was drowned, but the pilot, Mr. Victor Mahl, was saved. The wreckage drifted down Southampton Water, and was eventually brought ashore near Netley Hospital.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon	Fair	Fair	Fair	Windy	Windy	Misty	Fine
East Coast {	Fine	Fine	Fine	Windy	Windy	Wind	Fine
South Coast ...	Rain	Dull	Fine	Show'y	Show'y	Rain	Fine

Hendon.—AT THE GRAHAME-WHITE SCHOOL: Instructors: Messrs. Manton, Russell, Winter and Shepherd. Pupils with instructor: Prob. Flt.-Sub-Lieuts. Hodsoll, Price, Bray, Cooper, Barnes, Groves, Young, and Watson, and Mr. Y. Y. Liu. Strts: Prob. Flt.-Sub-Lieuts. Field and Groves, and Mr. Easter (special landing practice). 8's and circs.: Prob. Flt.-Sub-Lieuts. England, Morgan, and Ffield, and Messrs. Carabajal and Easter. Certificates taken: Prob. Flt.-Sub-Lieuts. England and Morgan. Machines: Grahame-White biplanes.

AT THE LONDON AND PROVINCIAL SCHOOL.—Instructors: Messrs. W. T. Warren and M. G. Smiles. Pupils rolling alone: Messrs. Moore, Abel, and England Derwin. Strts: Mr. W. White.

AT HALL FLYING SCHOOL.—Instructor: Mr. J. L. Hall. Pupils doing strts.: Mr. Lloyd Williams (11) good strts., Mr. R. Pinniger (2), Mr. A. Davy (5), Mr. Mitchell (2). 8's or circs.: Mr. J. Rose 7 at 600 ft. and 4 at 350 ft., landing with spiral glide; Mr. J. Rose is now ready for brevet. Machines: Hall biplanes.

AT THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. R. Desoutter and R. M. Murray. Pupils doing strts: Flight Sub-Lieut. Bird, and Messrs. Beynon, Stevens and Barfield: and Flight Sub-Lieut. Trench and Messrs. Burke and Williams, rolling. Mr. Ivermee figures of 8 and circs. Machines: Three Caudron biplanes. Passenger flights were given to pupils on 60-h.p. two-seater Caudron biplane.

AT BEATTY SCHOOL.—Instructors: Mr. Geo. W. Beatty and Mr. W. Roche-Kelly. Pupils under instruction: Messrs. Gardiner, Parker, Whitehead, Jenkinson, Leeston-Smith, Geo. Beard, Beynon, Newberry, Monfea and Le Vey. Machines: Beatty-Wright dual control.

Shoreham.—AT PASHLEY BROS. AND HALE SCHOOL.—Instructors: Messrs. C. S. Pashley and B. F. Hale. Pupils: Messrs. Menelas Babiotis, J. Sibley and J. Morrison. 8's or circs.: Messrs. C. Winchester, J. Woodhouse, T. Cole. Machines: Two H. Farman-Pashley biplanes and one Avro.

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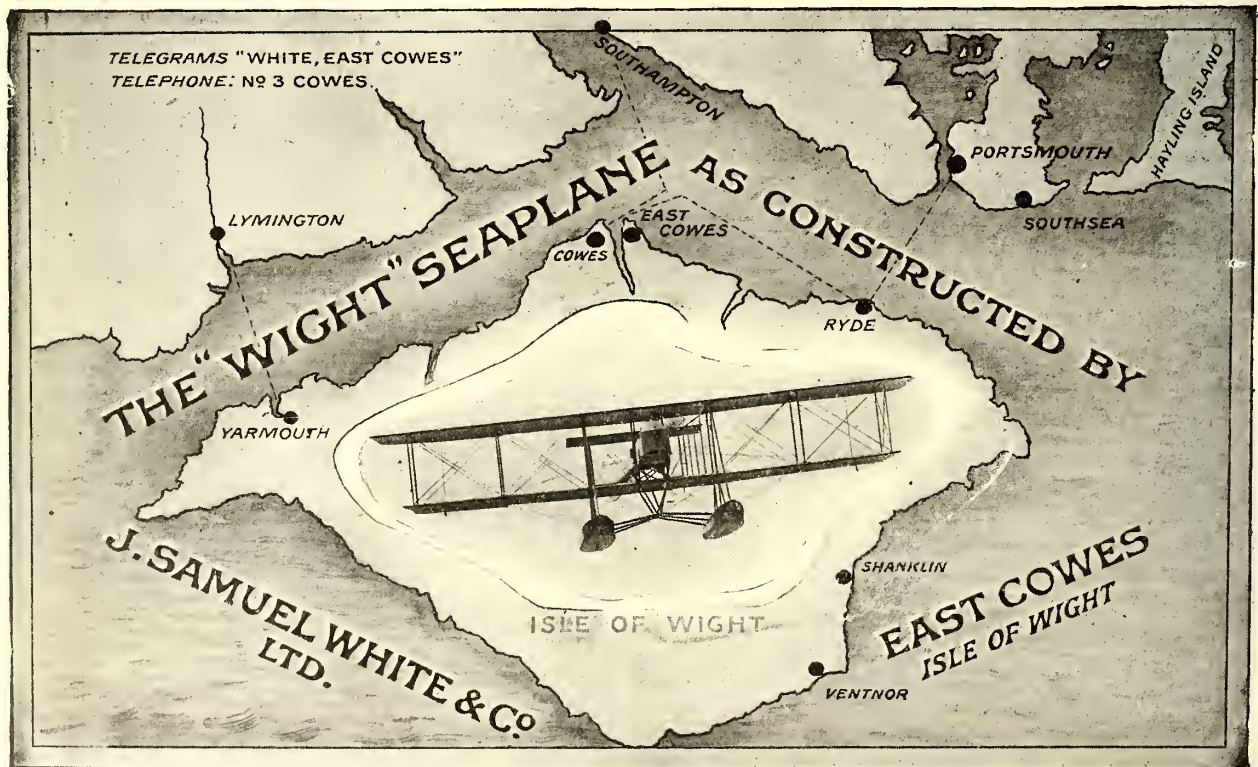
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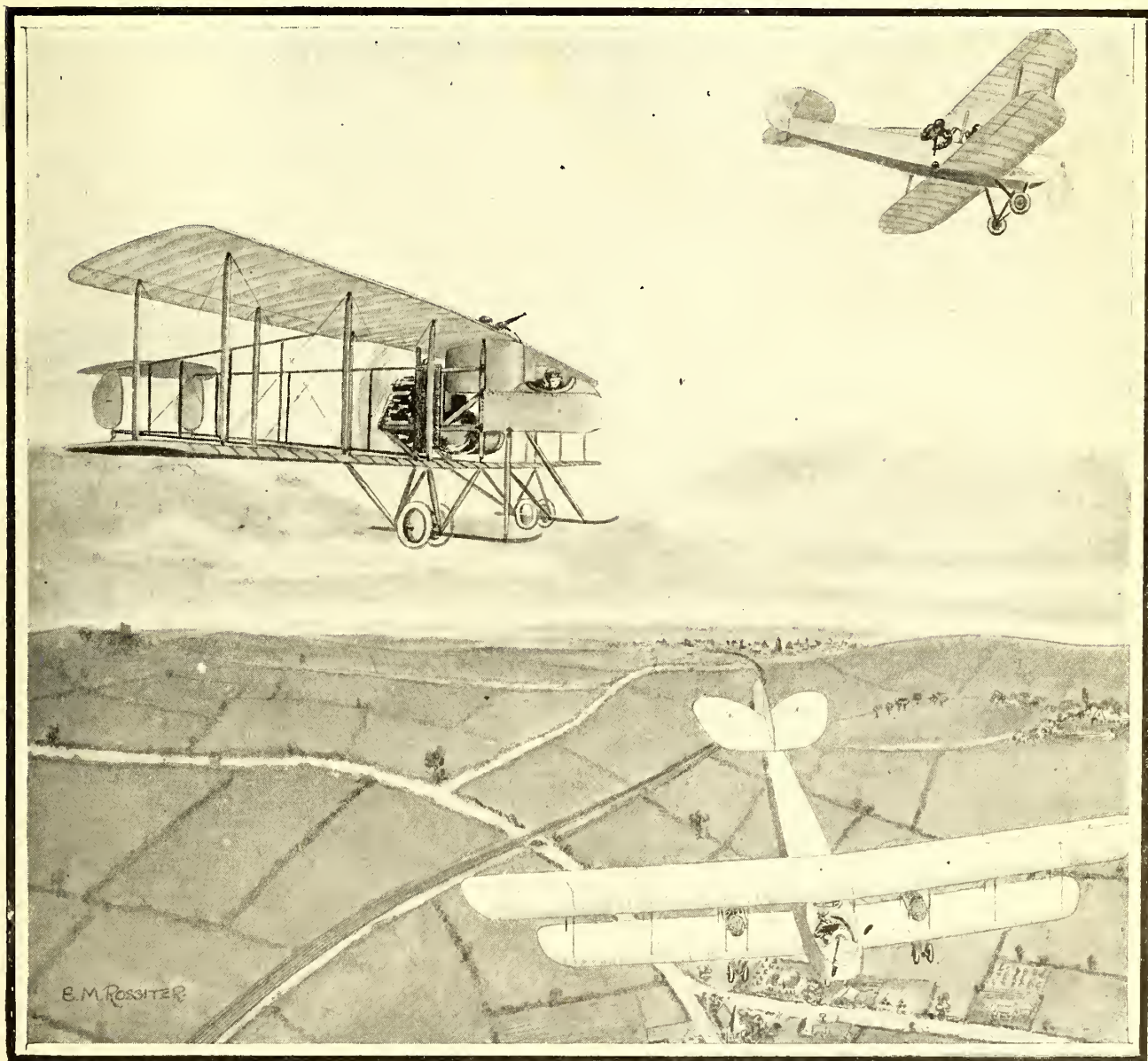
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.
AS A NEWSPAPER.]

WEDNESDAY, NOVEMBER 11, 1914.

No. 20

ARMS VERSUS ARMOUR.



Our artist has here endeavoured to convey an impression of an aerial "mix up" between possible machines of the future, in which a twin-engined "pusher" biplane, carrying a machine-gun in front, is attacked by a small and faster two-seater armoured "scout," in which the passenger, placed behind the pilot, is armed with a short carbine. The twin-engine machine dives to escape, and to its rescue there comes a 200-h.p. fighting machine, in which a small quick-firer is carried in a streamlined turret, so that it has a clear field of fire round a full circle, and so can attack or defend itself in any direction horizontally or upwards. Presumably our artist intends the pilot to look after any attack from below.

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Offensive and Defensive Aeroplanes.

There is perhaps some personal satisfaction in being able to say, "I told you so"—as so many of us who foresaw something of the possibilities of aircraft have been saying for the last two months—but it does not help things along much unless one can keep on telling what is likely to happen, and telling what is wanted to meet consequent needs in the future. Then the mere fact that previous warnings have proved true may help to impress one's hearers with the accuracy of later prophecies.

Those who have prophesied in this paper in the past have nothing to regret in their prophecies—in fact, in most cases, they understated the work aircraft would do in war. Personally, I take no credit for the accuracy with which things have been foretold, for I have merely been the mouthpiece of those who spoke from their own experience. Therefore, I say, "They told you so," and it may be well that the lessons which anyone can have learnt in the last three months should be put in the form of suggestions for the future.

In recent numbers it has been pointed out that the first duty of aircraft is to scout. This duty has been impressed on us for a long time. In that excellent lecture which Colonel Sykes gave to the Aeronautical Society nearly a year ago, he emphasised the same point. He also indicated that there is a future for fighting aeroplanes, but at that period it appeared that the fighting aeroplane was only likely to be useful as a guard against hostile aircraft, to prevent them from coming in over our own lines to acquire information, or to protect our own scouts if they were chased back to our own territory. That, of course, would be a purely defensive aeroplane, but if I recollect rightly, Colonel Sykes did foreshadow the idea of big fighting machines which would force their way in over the enemy's country in search of information and repel the attacks of defending aircraft.

Still, when war broke out, the Army at any rate had got very little further than the idea of scouts and scout-defenders, vulgarly known as "gun-busses"—which one may compare fairly with T.B.D.s, and destroyer-leaders in the Navy. Other armies, including that of Germany, had reached about the same stage.

Russia alone had produced a really big land-going machine capable of lifting heavy loads. The Sikorski machines, "Russki Vitis" (or "The Russian Knight"), and "Iliá Mourametz" (or "Elijah the Prophet"—an apt name for a fire-driven chariot)—are still by far the biggest weight-lifters among aeroplanes. With their four engines apiece and their ability to fly comfortably with 16 or 20 people on board, they should be regarded seriously as the forerunners of the aeroplane battle-ships of the future. "Iliá Mourametz" is truly a prophet.

An Allegory.

May I here digress a moment? When this war broke out I suggested that a defensive alliance of Teuton and Latin against the inroads of the Slav into Europe would have been a more businesslike proposition than the present grouping of the various Powers. I now withdraw that view unreservedly. The British and

the French are on the right side after all. We pride ourselves on the fact that we in the West are the head and forefront of this war. We are nothing of the kind. We are merely a side-issue. All our alliances and diplomacy and all the rest are merely side-issues. The root cause of the war has nothing to do with German jealousy, or ambition, those also are side-issues. The truth is that we happen to exist at the start of one of the great epochs in world-history, comparable only to the fall of the Roman Empire, or the rise of Mahomet, or Christ, or the discovery of America. This is the coming of the Slav Race. The Latin Race has long been played out as a World-power. The Teuton could never become one—as anyone knows who has ever seen a German colony, or even a conquered province, such as Alsace or Schleswig. The future is to the Slav. Some day the great Slav leader will arise, as I said three months ago, and will consolidate the Slav nations.

To-day we only see the beginning of the great Slav wave which, sweeping from East to West, as all racial waves do, will cover Europe. The depopulation of Central Europe is now in progress, for Germany's and Austria's young men are dying literally in millions, and in a few months pestilence and famine will claim yet more millions among the old men, women, and children. The Slav will repopulate these countries.

Our part—France's and England's—is merely to prepare the way for Russia. We are merely instruments in the hands of Fate. We do not really count. Every man we lose is a man saved to Russia. The population of France has been stationary for years. After this war it will drop, for the men who are dying for France are the men who would, but for the war, be keeping up the birth-rate for the next ten or twenty years. France will be bigger in area after this war, by the recovery of Alsace, but the population per square mile will be smaller. Great Britain is losing the flower of her aristocracy, who are fighting for an ungrateful democracy, which is really not worth fighting for, and she will be weakened as a nation thereby. The Slav population is so enormous that the Russian losses can be nothing worth considering when expressed in percentages, and the Slav race is now the most prolific in the world? Who can doubt that the future is to the Slav? We shall continue to rule the sea and the lands beyond—if we are wise in our next generation. Russia will rule Europe. "Iliá Mourametz" is indeed a prophet. As the Sikorski is to other aeroplanes to-day, so is the Russian people. It is crude and clumsy, but it carries weight and it has power. Which thing is an allegory.

The Real Offensive Aeroplane.

This digression is longer than was intended, but it has its direct bearing on aircraft. The point I want to make is that the future is to the big aeroplane as a weapon of offence. The small, fast, single-seat aeroplane, either as a scout or as a destroyer, is as necessary as ever; we ought to have clouds of them to pursue and harass German aircraft, as I ventured to suggest last week. They would also be useful as arrow-droppers and bomb-droppers against retreating troops. The

successful raids on Düsseldorf and Cologne are a proof of what they can do.

It is now known that the airship then destroyed was a brand new ship, just delivered, and the moral effect of the performance was so great that, according to a citizen of a neutral nation who returned last week from that city, the well-to-do people of Düsseldorf and Cologne are moving into the interior of Germany for fear of more raids when the Allies approach closer to their frontier. This statement is verified by the proclamations issued by the military governor of Düsseldorf, and published in the local papers—as quoted in our German notes last week—reproaching the people with their lack of confidence in German inpregnability. Their fears are, however, well grounded, for it is certain that such raids will become more frequent and more deadly as our armies progress Eastward.

The real question is what type of aeroplane is the most efficient for such work. The small fast scout cannot carry a big load over and above the weight of fuel and pilot. The really big machine has a bigger margin for the carrying of explosives. Actually, such a machine is more efficient aerodynamically than the small one. That is to say, it will carry more weight per horse-power and more weight per square foot of surface than a small machine. But let us assume that it is merely equally efficient. If an 80-h.p. machine will do 90 miles an hour, and will carry fuel for a certain distance, and a certain weight of bombs, and a pilot who is also a bomb-dropper, then a 240-h.p. machine of equal efficiency will carry fuel for the same distance (that is three times as much fuel for three times as much power), three times as much weight in bombs, and three pilots. But only one pilot is needed, so one has a clear gain in being able to carry the weight of two pilots in the form of bombs—which means at least an extra 300 lbs. Thus one gets three times the destructive effect, plus 300 lbs., and one only risks one pilot instead of three—and, after all, an experienced pilot capable of carrying out such raids is worth more than many aeroplanes.

There is, of course, the answer that if one machine out of three small ones is brought down by the enemy the other two may reach their mark and get safely home, whereas the loss of the one big machine means complete failure. The rejoinder to that is simple—send three big ones. Again, it may be said that the big machine is easier to hit. That is true if it flies low, but it should not do so.

In this connection it might be worth while to consider the possibilities of the triplane, as giving increased lift without offering very great plan area as seen from below by one who shoots. I believe a triplane does not give 50 per cent. more lift than a biplane, because both the upper and lower surfaces of the middle plane are subject to "interference" from struts and wires, as well as from the currents off the other planes, but it might be possible to reduce these losses materially by proper streamlining and variations of camber. However, this is hardly the time in which to experiment, so we had better stick to what we have got, merely modifying it as circumstances demand.

The Effects of Past Policy.

Thanks to official discouragement of such low sports as record-breaking and competition flying, we have not developed weight-lifting machines such as the German height-record and 24 hours' record types, which are still "our betters." If my memory is not at fault, that 24 hours' record machine carried over 1,000 lbs. weight of petrol. 200 lbs. (at the rate of 7 gallons an hour) would be enough for 4 hours' flying, and that would leave 800 lbs.—or, say, 600 lbs., to leave plenty of margin for quick-climbing—simply for bombs, or arrows. And that is with only 100-h.p.

Now one sees what has resulted from discouraging

the 100-h.p. Green, and gambling on the alleged 70-h.p. Renault as a standard type three years ago. We have many curious things for which to thank the Royal Aircraft Factory, whose outlook towards the future seems to have been about as clear as that of Lord Haldane, friend alike of the R.A.F. and of the German Emperor. As an aside—one may recall that both the War Office authorities and Lord Haldane in the early days had a great admiration for dirigible balloons, and gas-bags in general.

Possible Bomb-Droppers.

However, the need of the immediate future seems to be for weight-lifters which will do at least 80 m.p.h., and will climb fast with a big load of bombs or arrows. The nearest things we have to such machines are the 160-h.p. Shorts, the 200-h.p. Wights, the big Avros (Circuit type), and the Sopwiths, all seaplanes. One would like to see such machines fitted with shore-going chassis, and tried at such work. A hundred or two of them would have been very useful in the battles on the Belgian coast and in North-West France lately, for the Germans were advancing in such masses that the arrows would have done real execution, and attacks of this kind on their reserves just behind the fighting line would have had a highly demoralising effect.

Even small bombs may be useful against men in masses. One of our military aviators told a friend of mine recently that some time ago he went out to drop bombs on some German aeroplane tents, and, after the first bomb had exploded, the field in which the tents stood became black, or rather gray, with soldiers who had run out to have a shot at him. Consequently, he came down from about 6,000 feet to about 4,000, to have a better view, and dropped the rest of his bombs, at intervals of a few seconds, onto the men. He said that every time a bomb dropped he could see a kind of splash in the sea of grey as the thing exploded, and it always left a little ring of bodies lying round the point where it fell, so, apparently, some execution was done.

The big machines carrying a quantity of these small bombs would be of high value, and, of course, for wrecking railways or bridges they could carry several bombs of a size which the small scouts could only lift one or two at a time.

Naturally, these big machines could afford to carry defensive armament in the way of machine-guns, against attacks by faster scouts, and though that would mean sacrificing some of their offensive qualities, it might be well worth while to do so when they were not required to do long-distance flights, and such armament would give them increased value if called upon to attack airships.

Types of Armed Aeroplanes.

Thus we arrive at several types of armed aeroplanes. First, there is the big bomb-dropper, a purely offensive machine, armed perhaps with a machine-gun for self-defence against smaller craft; this approximates to the battleship. Secondly, there is the fast cruiser type, probably a twin-engine "pusher," carrying a small quick-firer or a machine-gun in the bows, a purely defensive machine, armed merely to drive away hostile aircraft from its own lines, or to protect itself when attacked. Thirdly, there is the small, fast, armed scout, probably a two-seater "tabloid" tractor, carrying a machine-gun aft, to be fired broadside on—or backwards, as it passes a slower machine. This type may be classed as offensive-defensive, and corresponds fairly closely to the destroyer class among warships on the sea.

Hints to Young Pilots.

In connection with armed aeroplanes of the "pusher" type, with guns in front, pilots who have not had experience of such machines will do well to avoid two forms of mistake when taking them up for the first time. It must be remembered that these are designed to be in proper balance fore and aft when loaded with pilot, passenger, gun and ammunition. The pilot him-

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self sits fairly near the centre of pressure, and so variations in his weight matter very little; but any alteration in the weights in front make a big difference.

Apparently the theory of aeroplanes is not taught in some schools, so it may be well to point out that any type or machine is only a form of see-saw balance on an intangible point called the "centre of pressure," which is generally situated approximately in the neighbourhood of the front spar. Alteration in weight in the bow or stern of the machine throws it out of balance, and makes it either nose-heavy or tail-heavy.

The other day a gun-carrier was flown by its maker's pilot to one of the Service aerodromes, and the pilot had balanced it carefully by putting ballast under the passenger's seat to correspond to the weight of a non-existent passenger, gun, and ammunition. Next morning a Service pilot took the machine out with a passenger, and forgot to remove the ballast. He was quite surprised to find that the machine was down by the nose, and could only be made to fly by hauling the elevator hard back all the time, and also that she refused to climb.

Just the opposite happened at another Service aerodrome. In this case the pilot flew over with a passenger and ballast, and took both away with him. Next day a Service pilot took the machine out, without either passenger or ballast. The machine went up like a rocket, and he could only get the nose down by pushing the elevator right forward. Unfortunately, apparently the trouble was complicated by the fact that the absence of weight forward put the centre of gravity of the machine as a whole so far back that the machine became spirally unstable, despite a big fin aft, and spun while he was trying to get down. Fortunately, he fell into a nice soft tree-top and escaped unhurt—which was a better fate than he deserved.

It may be well to point out that accidents of this kind are no fault of the machines, for it is quite impossible to design an aeroplane so that big alterations of weights in the nose do not upset the balance longitudinally. Something might be done by making tail-planes with the angle of incidence variable by means of a wheel alongside the pilot, as in the D.F.W. and other German aeroplanes, and in the early Sommer biplane; but increasing the angle of the tail generally means making the machine longitudinally unstable, so it is cheaper in the end to carry proper ballast.

Apropos nose-heaviness, it may be well to remind newcomers to aviation that a nose-heavy machine will never climb well, because, in order to make it fly at all, it is necessary to press the tail down by keeping the elevator-flaps up. This means that the whole tail is pressing downwards and is adding just that amount of load to the main planes. On the other hand, a tail-heavy machine will lift easily, because the elevator-flaps have to be held down, and so give a lift which relieves the main planes of some of their work.

It is, however, difficult for an inexperienced pilot to distinguish between a machine which is tail-heavy because of the weight being too far back, and one which appears to be so because the down-current from the upper main plane presses on the tail-plane and prevents it from lifting, or from flying in the neutral position, neither lifting nor depressing, which its designer intended. In fact, there are hundreds of experienced pilots, who are excellent fliers when put onto a properly designed and balanced machine, who can never tell what is really the matter with a machine, and simply condemn it because they personally do not happen to like it.

Don't "Crede Experto."

Some time ago I came across a case in which an excellent machine of a new type was condemned utterly without any proper reason. Two officers went to "vet" it. One is a magnificent flier, but has always flown one make of machine. Consequently he is hope-

lessly at sea on anything of a different type. The other has flown quite a good deal, but has never shown the slightest indication of real knowledge of aeroplane design or construction. The crack flier tried the machine and could not handle it to his own satisfaction. The other officer looked it over and did not like the colour of the cushion in the seat, or something equally important. Consequently they both said it was of no use, and so a possibly useful source of supply was cut off. Only a few days later the same crack flier tried another new type, which, however, had previously been approved by several of the most versatile and experienced pilots in the Service. His exhibition in getting off and landing was painful to watch, but, fortunately for the makers, his opinion of the machine carried no weight. But it only shows how unsafe it is to depend on the opinion of an "expert" when Service matériel is being bought.

Armoured Aeroplanes.

It may be well just to point out, chiefly for the benefit of colleagues of the Press, that there is not necessarily any relation between an "armed" aeroplane and an "armoured" aeroplane. In fact, at present, practically no machines carry both arms and armour, simply because the combined weight would be too great. I believe the 160-h.p. Blériot carries a machine-gun, but it would have no lift to spare for bombs if it did so. The big gun-carriers and bomb-droppers certainly cannot spare the power to lift armour.

Naturally, the idea of "iron-clad" aeroplanes appeals to the Press, to whom any metal is "armour"—hence the fondness of newspaper people in the past for calling the aluminium-covered Bréguets "armoured war-planes." Nevertheless, armour of some sort is well worth having. Most of our own pilots carry sheets of Firth's bullet-proof steel under their seats to protect their bodies against rifle-fire from troops directly underneath, and one gathers that several have been saved from serious injury even by this small shield; but these plates do not protect them against lateral fire from other aeroplanes, or from vertical fire when banking on a turn.

Apparently the only serious attempts at using effective armour are the Blériots already mentioned, in which the whole section enclosing the pilot, passenger, tanks, and engine is of bullet-proof steel, and the little single-seat "scout" designed some months ago by Mr. Coanda, before he left the Bristol Co. In these the pilot sits in a steel chair with a kind of armoured bath in front to hold the control-gear, tanks, etc. One learns that these machines are now being built—certain modifications having been made—by M. Bréguet, and the type is well worth developing. The scout, who is simply out for information, and who does not want to hit back, can afford to carry armour.

Also, by proper designing—that is to say, by using the armour to replace wood and steel framework—the added weight of armour can be very materially reduced. If the whole forward section of a machine is one tube of armour, with holes cut in it to admit the crew, it would be absolutely safe against anything except shell-fire, and if we had had such machines the lives of probably four officers would have been saved—namely, Captain Crean, and Lieutenants Hosking, Waterfall and Bayly—and certainly several wounds, and unintentional descents owing to punctured petrol-tanks, would have been avoided.

Of course, the bigger the machine the better it can afford to carry armour, for the space to be occupied by pilot and passenger does not increase in anything like the proportion that the size of the rest of the machine does—which, curiously enough, brings us round the circle of argument to the very big machine again, and to "Ilia Mourametz," the prophet of the future.—C. G. G.

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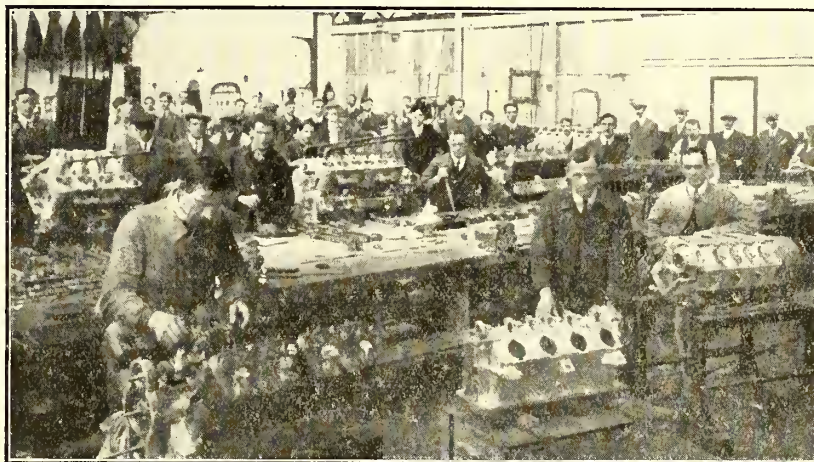
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From the "London Gazette," November 3rd, 1914.

ADMIRALTY, October 30th.

October 31st.—The undermentioned engineer lieutenant has been promoted to the rank of engineer lieutenant-commander in his Majesty's Fleet: Thomas Reginald Cave-Browne-Cave. Dated November 1st, 1914.

WAR OFFICE, November 3rd.

His Majesty the King has been pleased to approve of the undermentioned colonel (temporary brigadier-general) being promoted to the rank of major-general for distinguished conduct in the field. Dated October 26th, 1914: Sir David Henderson, K.C.B., D.S.O.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—ROYAL FLYING CORPS (MILITARY WING).—The undermentioned second lieutenants to be lieutenants. Dated September 16th, 1914: Edward N. Fuller, Christopher W. Wilson, Gordon N. Humphreys, David E. Stodart, Arthur A. B. Thomson, and Louis A. Strange.

The seniority of the undermentioned lieutenants whose promotion appeared in the "Gazette" of October 15th, 1914, is as now stated: D. C. Ware, next below C. W. Wilson; A. L. Russell, next below D. E. Stodart.

A Supplement to the "Gazette" of November 3rd, published on November 4th, contains the following military appointments:—

WAR OFFICE, November 4th. Regular Forces:—

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—ROYAL FLYING CORPS (MILITARY WING). Second Lieutenant (on probation) John C. Joubert de la Fertè is confirmed in his rank.

A Third Supplement to the "Gazette" of November 3rd, published on November 5th, contains the following military appointment:—

WAR OFFICE, November 5th. Regular Forces:—

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—ROYAL FLYING CORPS (MILITARY WING). Second Lieutenant (on probation) Denys Corbett-Wilson is confirmed in his rank.

From the "London Gazette," November 6th, 1914.

ADMIRALTY, November 4th:—

ROYAL NAVAL AIR SERVICE.—The undermentioned probationary flight sub-lieutenants have been confirmed in the rank of flight sub-lieutenants: James Douglas Maude. Dated August 1st, 1914. John Martin D'Arcy Levy. Dated August 5th, 1914. The Hon. Desmond O'Brien. Dated August 18th, 1914. Gordon Lindsay Thomson. Dated August 24th, 1914.

The undermentioned flight lieutenants have been promoted to the rank of flight commander: Francis George Brodrigg, Ennis Tristram Ratcliffe Chambers, Hugh Alexander Williamson, Cecil Francis Kilner, Wilfred Briggs, Edmund Digby Robertson, Douglas Hyde-Thomson, and Reginald Lennox Marix, D.S.O.

The undermentioned flight sub-lieutenants have been promoted to the rank of flight lieutenant: Frederick Melville Barr, Herbert Graham Wanklyn, John Marten Rush Cripps, Eric Bentley Bauman, Cyril F. Lan-Davis, Sydney Pickles, Thomas W. Elsdon, Herbert Stanley Adams, and George Miller Dyott. Dated October 31st, 1914.

WAR OFFICE, November 6th. Regular Forces. Establishments:—

ROYAL FLYING CORPS (MILITARY WING).—Captain H. Wyllie, 9th (Cyclist) Battalion the Hampshire Regiment, to be a flying officer. Dated October 26th, 1914.

SPECIAL RESERVE OF OFFICERS.—Supplementary to Regular Units or Corps:—

ROYAL FLYING CORPS (MILITARY WING).—The Hon. Arnold Joost William Keppel.

The undermentioned second lieutenant (on probation) is confirmed in his rank:—

ROYAL FLYING CORPS (MILITARY WING).—Archibald Burch Ford.

A Third Supplement to the "Gazette" of November 6th, published on November 9th, contains the following military appointments:—

WAR OFFICE, November 9th.

REGULAR FORCES. — Special Appointments. — Deputy In-

spector-General of Communications: Colonel John E. Capper, C.B. and to be temporary brigadier-general. Dated September 29th, 1914.

ESTABLISHMENTS.—Royal Flying Corps (Military Wing).—The undermentioned lieutenants, Special Reserve, to be flying officers. Dated June 30th, 1914: Arthur L. Russell, Arthur A. B. Thomson, and Louis A. Strange.

The undermentioned to be flying officers: Alastair St. J. M. Warrand, the Black Watch (Royal Highlanders), and to be seconded. Dated October 21st, 1914. Dated October 30th, 1914: Captain J. H. A. Landon, 4th Battalion Essex Regiment.

SPECIAL RESERVE OF OFFICERS.—Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—Alexander Burnell Rendall, from Inns of Court Officers Training Corps, to be second lieutenant (on probation). Dated November 10th, 1914.

The "London Gazette" announces that the President of the French Republic has bestowed the decoration of the Legion of Honour on the undermentioned officers, with the approval of his Majesty the King, for their gallantry during the operations between the 21st and 30th August:—

CROIX D'OFFICIER.

Captain and Brevet-Major H. R. M. Brooke-Popham, Oxford and Bucks Light Infantry and Royal Flying Corps.

Major J. F. A. Higgins, D.S.O., Royal Field Artillery and Royal Flying Corps.

CROIX DE CHEVALIER.

Captain I. M. Bonham-Carter, Northumberland Fusiliers and Royal Flying Corps.

Captain L. E. O. Charlton, D.S.O., Lancashire Fusiliers and Royal Flying Corps.

Lieut. L. Dawes, Middlesex Regiment and Royal Flying Corps.

Captain E. L. Ellington, Royal Field Artillery (Royal Flying Corps Reserve).

Captain R. Grey, 1st South Midland Mounted Brigade, Warwick R.H.A., and Royal Flying Corps.

Lieut. W. Lawrence, 7th Battalion Essex Regiment and Royal Flying Corps.

Captain G. S. Shephard, Royal Fusiliers and Royal Flying Corps.

It is notified that there are no restrictions as to the occasions on which these Honours may be worn.

[It is to be noted that these officers of the Royal Flying Corps regard these distinctions not as personal honours, but as decorations which they will wear as representatives of the Corps as a whole. On the whole the forecast of our French correspondent published last week was not far wrong.—Ed.]

NAVAL.

The Secretary of the Admiralty announces the following casualties in the Royal Naval Air Service, as the result of the loss of his Majesty's Ship "Hermes" on the 31st ult. According to the latest information available those reported as missing were serving on board at the time of the disaster.

SERIOUSLY INJURED.—Flight Lieutenant Francis G. Brodrigg, R.N.

DEAD.—Collier, Tom Donald, Air Mechanic 1st Grade, F.48.

SEVERELY WOUNDED.—Saunt, Geoffry Barfoot, Air Mechanic First Grade, F.44.

SLIGHTLY WOUNDED.—Godfrey, William, Petty Officer Air Mechanic.

MISSING.—Ferguson, Alexander, Telegraphist (Air Service). Turner, John, Chief Petty Officer Mechanic.

The wounded have been removed to the R.M. Infirmary, Deal. The Board of Admiralty will at once take steps to pay pensions and gratuities provided under the Regulations. Should any of the dependents of the deceased men have been in receipt of assistance from the local branch of the Soldiers' and Sailors' Families Association or any other similar local organisation they should request the Association concerned to notify the Secretary of the Royal Patriotic Fund, 17, Waterloo

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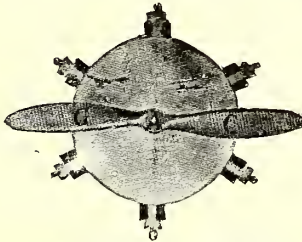
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* * *

The following appointments were made at the Admiralty on November 4th, 1914:—

Sub-Lieutenant J. R. W. Smyth-Piggott has been promoted to the rank of acting Lieutenant with seniority, November 4.

The undermentioned flight lieutenants have been promoted flight commanders, all with seniority, October 31st: F. G. Brodribb, E. T. R. Chambers, H. A. Williamson, C. F. Kilner, W. Briggs, E. D. Robertson, D. Hyde-Thomson, and R. L. Marix, D.S.O.

The following flight sub-lieutenants have been promoted to the rank of flight lieutenant, all with seniority, October 31st: F. M. Barr, H. G. Wanklyn, J. M. R. Cripps, E. B. Bauman, C. F. Lan-Davies, S. Pickles, T. W. Elsdon, H. S. Adams, and G. M. Dyott.

The following appointments were made at the Admiralty on November 9th:—

Royal Naval Air Service.—Probationary Flight Sub-Lieutenants—H. R. Rosher and E. G. Riggall, confirmed in rank of flight sub-lieutenant, August 18th, and appointed to the "Pembroke III.," for duty with the Royal Naval Air Service, to date November 7th.

* * *

On November 5th, Probationary Flight Sub-Lieutenant P. B. Murray, R.N., was killed while flying at the Central Flying School. He was flying over Rushall Down and apparently attempted to land in Well Bottom, presumably on account of engine failure. Owing to thick mist it appears he was unable to judge the distance from the ground, into which the machine flew without flattening out. At any rate, according to the evidence at the inquest, the machine was found with its nose buried in the ground, with Sub-Lieutenant Murray, who was wearing a safety belt, still in the pilot's seat, his death having been caused simply by dislocation of the neck.

Mr. Murray took his certificate, No. 881, on August 21st, on the Lakes' Flying Company's waterplane at Windermere, and he had the reputation at the Central Flying School of being quite a capable flier, considering his comparatively short experience.

* * *

It is reported unofficially that a land-going biplane of the R.N.A.S., piloted by Flight-Lieut. Beevor with the Earl of Annesley as passenger, has been missing for several days..

It is quite possible that the pilot may have crossed the Channel in safety, and have landed so far along the Belgian Coast as to have fallen into the hands of the Germans. All will hope that this has been the fate of these two promising young officers, and that they have not been lost at sea.

Flight-Lieut. C. F. Beevor is the elder son of Lieut.-Colonel W. Beevor, C.M.G., M.B., a Deputy-Assistant Director of Medical Services. He appears in the Army List as in the Special Reserve of officers of the 18th Hussars, to which regiment he was gazetted on March 22nd, 1911. He was appointed to the R.N.A.S. on June 3rd, 1914. He had already seen active service as a volunteer in the Balkan War.

Countess Annesley has been informed that Earl Annesley has been missing since Thursday, when he left the south of England by aeroplane for France.

Earl Annesley took part in recent fighting in Belgium. In a letter written a few weeks ago to Countess Annesley from a place just outside Antwerp he said: "Escaping from Douai, where, in armoured motor-cars, with two Maxims and 30 men, we were surrounded, we joined forces with a big lot of Marines, and were under shell fire for 50 hours. We retired on the inner line of fortifications, got across the river, and for a moment were safe. My men wanted to fire at a Faube aeroplane, but I prevented them. War is hell."

For the last few years Lord Annesley has taken great interest in aviation. Recently he was granted a temporary commission as sub-lieutenant in the Royal Naval Volunteer Reserve. It was in this capacity that he saw active service in Belgium. He is an Irish peer, and is in his 30th year.

The recent raid by German warships on the East Coast had evidently for one of its objectives, the destruction of the Coast Defence Station and the aeroplane sheds at Yarmouth. Fortunately, the shells fired at these buildings were not so successful as our Navy's bombs at Dusseldorf and Cologne, the German aim being wrong in all three dimensions.

* * *

Apocryphal reports of Zeppelins in Belgium, one learns that an amusing story is told against himself by a naval aviator who went out some weeks ago to look for a Zeppelin which was reported by telephone to be approaching the town at which his squadron was stationed. A genuine Taube had passed over some time before, but was out of sight before anyone could start after it, and presumably it was this machine which was reported from neighbouring towns as a Zeppelin, for—as stated recently—the average Belgian calls everything in the air a Zeppelin.

However, when the report came in, off he went on a fast scout to look for the airship. He cruised around, at 6,000 ft. or so, for a long time, but could see nothing of any aircraft, and had just made up his mind that it was time he started for home if he did not want to land in the dark, when in the far distance he espied a long narrow shape, yellowish in colour, and pointed at the ends. Zeppelins are generally painted gray or aluminium, but ordinary airships are yellow, so he thought it might be an airship of some kind, and went off to investigate. He flew for miles, making up his mind that even if he had to land in pitch dark, it was worth while so long as he could bag an airship. Finally he got well over it and came down to investigate. And at about 2,000 feet he discovered that his Zeppelin was a long narrow strip of a cornfield, with the sun shining on it.

Naturally, he made off homeward as quickly as possible, and after flying long enough to bring him somewhere near his starting point he came down again to look for the landing ground. Then he found that though he was flying in the sunlight at 5,000 feet or so, it was pitch dark on the ground—which was quite natural, when one remembers how mountain-peaks often have the sun on them when it is black night in the valleys. Finally he succeeded in landing safely, in a perfect grass field alongside a canal, pulling up only a few feet away from a ditch which would have wrecked the machine if he had fallen into it. The only guide he had in landing was a dim reflection from the water of the canal. He is now a pronounced sceptic on the subject of airships.

MILITARY.

A following passage from the "Eyewitness's" report from General Headquarters, published on Friday, November 6th, deals with aircraft:—

The results of the inundation to the north of Dixmude have been observed by our aviators, who have seen numbers of the enemy collected in groups on the dykes which intersect the flooded area, where, according to report, some of the German heavy artillery is bogged.

Our airmen have also been able to harass advancing hostile columns by bomb-dropping and machine-gun fire. The tactical transfer of troops behind the German front line is now carried out to a great extent by motor omnibuses, of which long strings are visible from above.

* * *

The following N.C.O.s and men of the Royal Flying Corps are among a list of those British soldiers on active service on whom the President of the French Republic has bestowed the "Médaille Militaire" in recognition of their gallantry during the operations between August 21st and 30th:—

Sergt.-Major T. Bullen (132).

Corpl. C. R. S. Evans (546).

1st Class Air Mechanic H. J. Gardner (386).

Corpl. T. L. Gliddon (210).

1st Class Air Mechanic H. Jameson (1082).

Corpl. S. Jenkins (112).

1st Class Air Mechanic D. McIntyre (593).

Sergt.-Major A. H. Measures (12).

1st Class Air Mechanic W. P. Parker (269).

Corpl. F. W. Powell (521)

1st Class Air Mechanic A. H. Reffel (759).

Sergt. E. J. Street (224).
 Sergt. E. L. Taylor (904).
 Sergt.-Major F. H. Unwin (8).

There are no restrictions as to the occasions on which this decoration may be worn.

Amongst the list of wounded officers published on November 9th appears the name of Major J. F. Higgins, D.S.O., Royal Flying Corps. Major Higgins has commanded No. 5 Squadron R.F.C. since its formation. Though not a young man when he learned to fly, he soon developed into an unusually able pilot and is one of the few military aviators who have been allowed to fly the high speed "scouts." One wishes him an early recovery.

Later reports state that Major Higgins is already able to return to duty, though he is not yet flying. It is also stated that he has been specially promoted to Lieutenant-Colonel, and graded as Wing-Commander, R.F.C. This grading is new, so far as the R.F.C. is concerned, though there are several officers of the R.N.A.S. bearing that title, for in the R.N.A.S. it is a rank and not a grading. No one has worked harder for the efficiency of the R.F.C. than has Major Higgins, and those who have the good of the Corps at heart will feel gratified that his good work has been recognised in this way.

Lieut. Kenneth Rawson-Shaw, R.F.A. and Royal Flying Corps, has written home to say that he is, with Lieut. H. G. L. Mayne, K.O.Scot.Bord. and R.F.C., a prisoner of war at Crefeld. They are well and are treated well. He was acting as pilot, and their engine was hit by bullets, but on coming to ground they managed to destroy the machine before being captured by German cavalry.

* * *

The Royal Flying Corps evidently continues its work with energy, judging from the following extracts from letters:—

A cavalry officer writes:—"Our aeroplanes have been buzzing about a lot over us lately. The Germans shell them, and you can see and hear the shells burst, leaving little puffs of smoke, but they never hit one."

A railway transport officer writes:—"Since I have been here eighteen bombs have arrived at the station, but none hit the mark. One day I saw an air duel between a German aeroplane and one of ours, and we could distinctly hear our man shooting at the German. I believe he eventually brought him down."

Yet another officer writes:—"Our airmen are splendid, and treat the shells from the German aircraft guns with contempt. A German airman two days ago dropped bombs into the market square of a town near here, killing several market women and wounding women and children. I suppose he will be given the Iron Cross for this brave deed!"

* * *

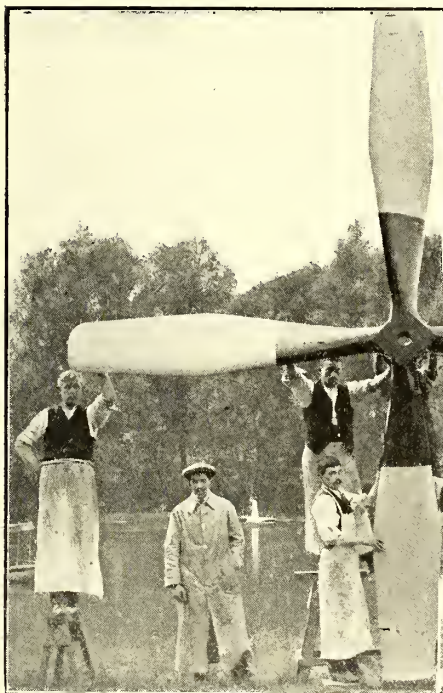
An officer of the R.F.C. writing home recently says:—"We are still having the best of times, although the weather does not improve. It is not bad, on the whole, but the clouds prevent us doing a lot of the work we should otherwise do. When we get a good day we make up for lost time and yesterday being such a one, I got in nearly five hours:—8.30 a.m.—patrolling for 1½ hours over an area in which certain troops were being moved, to scare off any 'Taubes' that might have been too inquisitive; unfortunately we saw none. 11 a.m.—reconnaissance for 2½ hours. At 3 p.m. a German flew over, and I started after him—had a fairly good hunt for an hour—got off about 40 rounds at him, and finally ran him to ground back behind his own lines.

"The anti-aircraft guns make a lot of noise and smoke and that's about all. They are about as good as I am with a driven partridge. I think this insult—if they had seen me shooting—would bore them 'some.' At the same time one has a certain amount of fellow-feeling with the birds whilst they are at it."

* * *

The following extract from a letter from a Driver in the A.S.C. to his sweetheart at Canning Town indicates better than anything one has seen the spirit of the British troops. The "Daily News" is to be congratulated on having got hold of it:—

"P.S.—Since writing the enclosed letter I have had a little experience which I will relate to you. I was sent to get



MUNITIONS OF WAR.—
 A Lang Propeller for a British Aircraft. It is here shown in its finished and unfinished state, together with some of the men who made it. It is the biggest single-piece four-blader on record.



some supplies for the troops, and had just had my wagon loaded. The officer told me to move on, which I did. I had hardly moved an inch when something went bang. A German aviator had dropped a bomb right on the spot where I had stood a few moments previously.

"The force of the explosion blew my hat off. The best of it was we could hardly stop laughing, for there was a young corporal with me who had been singing 'For the stormy winds do blow!' When the bomb exploded he was covered with dust. What a game! We do see life, even if we are not in London. But never mind, they will get two for that tomorrow. That bomb, Polly, fell in a ditch full of soft clay. If it had gone off on the road Alfie would have had his name on the Roll of Honour. But not yet awhile. . . . Have got a stiff neck coming on."

FRANCE.

The French official communiqué published on November 8th reports:—

A thick fog has prevailed all day, both in the north and in Champagne, as well as in Lorraine, restricting the activities of the artillery and of the Aviation Corps

This is the first mention in the campaign of the Allied aircraft being hampered by fog.

It was officially announced from Paris on November 3rd that on Monday three German aeroplanes in the region of Souain were brought down.

It was officially announced from Paris on November 5th that an accident, due to some unknown cause, had killed two of the most distinguished French aviation officers, Captains Rémy and Faure. Their machine fell on a house near Issy les Moulineaux.

The following official note on the subject of military aviation was issued in Paris on November 9th:—

The note books found on the German dead, wounded, and prisoners go to prove that our aviation branch has performed its duty well and produced at times the most startling effects.

A few examples will suffice. In the course of a reconnaissance on September 3rd a French pilot was attacked by a German aviator. The latter was promptly pursued by a second French aviator who, subjecting him to a violent rifle fusillade, forced him precipitately to descend.

On September 5th a French aviator attacked with bombs the bivouac of a company of the Guards with the result that eight men and eight horses fell, and 32 soldiers were wounded.

On September 12th a German non-commissioned officer showed his men a coat almost torn to tatters which belonged to one of some 60 men wounded by a projectile that had just then been hurled by one of our aviators.

Again, at Autry, towards the end of September, a bomb killed some 30 soldiers at the edge of the Seruit, another projectile killing or wounding 20 soldiers.

On October 9th a bomb which burst in the midst of a group of cavalymen killed 30 men and 50 horses.

To the south-east of Lille a cavalry division which had been pursued and fired on during the whole of October 15th was at length prevented from carrying out its object by a bomb.

As a result of the explosion of the bomb thrown at Autry a Headquarters installed in that locality was obliged to change its quarters in all haste.

A less prudent Headquarters than the last-mentioned was at Thielt, and had a severe trial from the fire of our aeroplanes, which hurled 32 bombs or shells there on November 1st.

On their side the British aviators, whose activity is well known, pushed as far as Düsseldorf and did great damage to the airships at that place.

All these feats have been accomplished under the fire of the enemy, and not a single French aviator has appeared without being greeted by shrapnel. The enemy's fire has not failed to cause us losses, but reserve pilots, burning with a desire for aerial warfare, have at once obtained permission to mount the skies.

In short, the new arm has fulfilled its promise and has duly taken its part in general success. But, if the aviator is a new arm, he replaces no ancient arm. The cavalry must always reconnoitre and patrol, the artillery open out the way for the infantry, while the engineers must prepare the ground for the latter. Finally, the infantry itself, still the main factor in battle, must take positions and attack the enemy.

[The communiqué has evidently been issued with the object of restoring some of the confidence in the French Military Aviation Service which was lost a month or so ago through the uninterrupted series of visits by German aeroplanes to Paris.—Ed.]

The German aviators have lately been dropping over the French lines a publication called the "Gazette des Ardennes." It purports to be a journal (price 5 centimes) of news of the outside world for the use of the inhabitants of the country held by them. The first number is as clever as can be, and is culled from the Agence Wolff and the German Headquarters dispatches. Care has been taken to insert more or less correct news in order that anything they may say in future may be believed by the populace. The journal is excellently printed in French, and is being dropped in bundles in weighted German flags.

The Royal Flying Corps do not seem to have a monopoly of excitement, for one gathers that a French Blériot pilot attached to the French forces had an exceedingly bad time in a thunderstorm right over Paris, when on his way to the front, and soon after he had reached the scene of operations a shrapnel bullet struck a wing on top during a reconnaissance at 2,000 metres, damaging the rear spar and ripping the wing open, but fortunately the wing held sufficiently well to enable him to get down safely.

Corporal Madon, another French Blériot pilot, was brought down between the French and German lines on October 31st en panne, but fortunately was able to get away.

A British officer who met M. Noel recently says:—"Noel was great sport, and very pleased to see me. The only thing that worried him was that he had not as many bullet holes through his machine as someone else in his escadrille."

It is good news to hear that the Sapeur-aviateur Louis Noel is still doing splendid work. According to a French correspondent, his chief aim in life is to bring down a Taube.

The French pilots all express their great admiration for their observers, who go out every day on any machine and with any pilot.

The "Exchange" Co.'s Paris correspondent reported on November 6th that at Blanchy one of our aviators dropped a bomb, destroying the railway line, and thus prevented several German trains from regaining their own lines. A detachment of Dragoons was immediately sent out, and to their amazement they found the enormous pieces of a 17-inch gun and carriage. This is the first of these big guns captured. The story may or may not be true.

Mr. Herbert Vivian, the "Express" correspondent at Marseilles, reported on November 2nd that a Maharajah has brought over three aeroplanes and several armoured motor-cars. The story is improbable, for the good and sufficient reason that there are no aeroplanes in India which he could have brought.

A correspondent of the "Telegraph" gave, on November 7th, the following interesting note on the use of captive balloons by the French army:—"The French were not long in increasing the number of their captive balloons, and now on both sides they are being used in large numbers. Naturally, a more elaborate plant is required for balloons than for aeroplanes. As might be expected, the captive balloons are the object of attacks on the part of aeroplanes. Again and again German aeroplanes have attempted to drop bombs on captive balloons, but up to the present have not succeeded in doing any damage.

"M. Emile Dubonnet, a wealthy French sportsman and a well-known balloonist, was the leading actor recently in one of these attacks. While observing near Soissons, at a height of 800 metres, a couple of Taubes attacked him, taking up a position above the balloon and attempting to drop bombs on it. The order was immediately given to wind in the balloon, and at the same time two Maurice Farman armoured biplanes were sent out to give protection. While the balloon was being brought down the French aeroplanes described circles around it, at the same time firing at the baffled German aviators."

[M. Dubonnet will be remembered as a clever pilot of Tellier monoplanes. He is the proprietor of "Dubonnet Quinquina," and a millionaire sportsman. The reference to "armoured" Maurice Farmans is probably an error for "armed."—Ed.]

The same correspondent continues, apropos artillery fire-control:—

"At the beginning of the war the method employed by observers sent out on aeroplanes to note the effect of artillery fire was to return to headquarters and either descend or drop a message. In the former case a considerable amount of time was lost, for it was rarely possible for the aviator to land near the person to whom the message had to be given, and the final delivery was by motorist, motor-cyclist, or horseman. After careful observation it was discovered that the German method was entirely different. When the aviator got above the position being shelled he described a figure "8" in the air, the centre of the figure being as far as possible directly above the position sought by the gunners. When directly over the position he dropped a white fuse. Waiting to observe the effect of the fire, he corrected it by dropping a yellow fuse if the shells were falling to the right and a blue fuse if they were going to the left. This work was carried out with remarkable celerity, the corrected fire rarely failing to find its mark. Profiting by this experience, the Allies have modified their system of signalling from aloft, and now have a method the nature of which cannot be revealed, equal if not superior to that of the enemy."

Mr. Massac Buist, writing in the "Morning Post," says that according to the "Berliner Tageblatt," which reproduces a letter from the western battlefield by a German lieutenant, our enemy is alleged to be beginning to understand how to deal with French aviators in regions where the Germans chance to have balloon guns in the field. This officer asserts that our Ally's airmen clear off as quickly as possible when these guns are fired. Against this, however, we must bear in mind the established fact that in one district in Belgium, where a French biplane and a monoplane were engaged for over an hour over the German lines in a region where the enemy had anti-aircraft weapons to fire against them, the monoplane had not the least difficulty in rising to an altitude quite beyond the range of its missiles, while the biplane, which kept within their range, had eighty-six shrapnel fired after it, only two of which came anywhere near the French aeroplane, the balance being extremely wide of the mark. Nevertheless the German letter writer in question declares that the English are also learning to respect the German balloon gun, in that when it has fired at them they turn and disappear. He even claims that one has brought down a British aviator, the splinters of a shell killing the passenger and wounding the pilot. According to his description the British machine, when hit, plunged suddenly, glided for 200 metres, and dropped the final fifty metres, yet it was only slightly damaged and is now used by the German aviators! This summary of what, he says, occurred sufficiently reveals the impossibility of the story, and the need to accept German versions of alleged successes against the aviators of the Allies with reserve.

[One may add that no report has yet been received of a British aeroplane having been brought down by shell fire, otherwise the German account is sufficiently accurate, in that if a machine beating up slowly against a strong wind, and so offering almost a stationary mark, is fired on by anti-aircraft guns, the pilot would naturally run away down wind at high speed, so as to become more difficult to hit, and would try to cross the German line somewhere else.—Ed.]

The "Morning Post's" correspondent in Northern France reported on November 3rd as follows:—

"If the Germans have sprung a surprise upon us in the way of heavy guns, they have certainly also done something similar with their aeroplane service, for the activity of these aerial scouts all along the line is simply incredible. All over this Somme department there are daily visits of these pests, sometimes singly and sometimes several at a time. But they are not as expert bomb-throwers as our aviators, and their efforts in this direction leave the populace quite unmoved. As scouts, however, they seem to do good work in giving the range to their gunners, judging by the results of their visits, in the shape of greater precision in the arrival of the shells. In this department, as unfortunately in others, such as the transport of their big guns, the exceptionally fine weather we are enjoying this autumn is in favour of the Germans. In sunshine against a background of blue sky an aeroplane is infinitely

less visible than in cloudy weather, and makes a very much worse target."

[This, be it noted, is from the paper which said a week ago that the German air service was not "advertised" before the war. Incidentally, it does not show that "marked ascendancy" in the air of which Headquarters spoke so cheerfully six weeks or so ago. Or is it that we are getting short of machines, thanks to delays over "official" designs?—Ed.]

GERMANY.

It is reported from Paris that the German aeronautical losses since the beginning of the war have been considerable. Up to October 15th fifty-two pilots had been killed or were missing, and over one hundred machines had been put out of action.

Writing in the "Daily Chronicle" of November 6th from Constance, Mr. Alan Bott fills a column with a scaring article about the new Zeppelins being built at Friedrichshaven. He talks of "special platforms round the sides for light artillery." The recoil of the smallest "artillery" would wreck any Zeppelin. Pom-poms would be about its limit, though possibly 2-pounders could be used. He also has "Dr." Graves' yarn about "special apparatus" able to refill empty gas-bags. One must therefore point out again that gas-cylinders holding compressed hydrogen weigh more than the lifting power of the gas they hold. The new "silencer"—as old as Captain Hinds-Howell's old Howard Wright monoplane of 1910—is another of his wonderful discoveries. He has also discovered that one balloon of a Zeppelin may be deflated without sinking the ship, but he has not discovered that if one is hit by a small incendiary bullet the whole ship goes to glory in flames.

A thrilling invention by "one of the mechanics" is a "projector, consisting of an iron tube, through which, by means of a complex sighting apparatus that allows for wind and velocity, projectiles can be dropped accurately from high altitudes." Fancy a mechanic inventing such a thing—but then he may have been to the Paris Aero Show of two years ago, and have seen quite a nice thing of the sort there. Afterwards Mr Bott fills half a column with "word-painting" about a Zeppelin in course of building, which might have been written up from material published in *THE AEROPLANE* any time in the last three years. Really, these "specials" are too funny.

The "Telegraph" of November 7th prints the following:—
"Under the title, 'The Nest of Vultures,' M. Georges Prade gives in to-day's (Paris) 'Journal' a somewhat startling account of Germany's Zeppelin factory of Friedrichshaven, on Lake Constance. We now know, on indisputable authority, says M. Prade, that the Zeppelin works at Friedrichshaven turn out a dirigible every three weeks, and have done so since the beginning of the war with mathematical regularity. Towards the end of July Z. 24 and Z. 25 were taken over on completion. Numbers 26, 27, 28 and 29 were sent out on various dates between August 10th and October 15th, and Z. 30 was due to be sent out on November 5th. To those who were intoxicated by a vision of a fleet of twenty-five Zeppelins, mobilised before November 15, this figure of a dirigible turned out every twenty-one days may seem comparatively small; but when the difficulties of the case are borne in mind, and when it is remembered that some twenty different industries are involved, the construction of such a monster in little over 500 hours must appear an industrial tour de force."

[M. Prade is very far out in his figures. Z. 24 and Z. 25 were turned out last year. Z. 26 and Z. 27 are somewhat more recent. Z. 28 and Z. 29 are probably building at Potsdam, and apparently Z. 31 came out the other day, while Z. 30 may be under construction (as he states).—Ed.]

The "Times" correspondent at Lubeck, writing on October 26th says, *inter alia*:—

I was in Düsseldorf when the English airman visited the town for the second time. It was a splendid feat—he took the Germans by surprise. The soldiers seeing the hostile aircraft high up in the air shot at it continually until suddenly the aeroplane started to glide lower and lower; the people were mad with joy and shouted hurrah. The soldiers got ready to catch the aeroplane as it fell when suddenly from a height of between 100 to 200 metres the airman threw several bombs, one of which reached its goal—the Zeppelin shed, in which there was the air-cruiser, the pride of Düsseldorf, which had received orders to join the army in France that same afternoon.

In spite of my being a good distance away, I heard the explosion, the smoke whirling high into the air, and I saw the airman escape in the common confusion.

"There really remained of the fine airship nothing but ruins and ashes, but the papers throughout Germany published the next day 'Zeppelin shed slightly damaged.'" Nothing was said about the four officers who were killed and the many who were wounded. But Düsseldorf knew in spite of the censor, and I cannot describe the nervousness that followed. People began to doubt if all that the papers wrote about their army having daily victories was really true.

"I spoke with many 'Tommies' (prisoners at Düsseldorf); all seemed as happy as they could be under the circumstances. Their only fear was for their country. They had been told by the German guards that there was a revolution in England, more especially in London, that the Bank of England had been destroyed by Zeppelin bombs, that civil war had broken out in Ireland, and many other tales.

"I went to Cologne, the important fortress town, well known to me from earlier days. It had changed much. For fear of an air raid, quick-firing guns were placed on the roofs of several buildings all around the town. English airmen, especially, were the cause of much uneasiness amongst the population."

BELGIUM.

It was reported on November 4th that successful aeroplane operations carried out by the Allies have involved the destruction of a considerable quantity of stores and material at one of the enemy's bases.

On November 4th, a French aviator was reported to have dropped two bombs on Bruges, with the intention of destroying two oil tanks, but the bombs landed about fifty yards from the tanks, killing two Germans and wounding a woman and child. At the same time a British aviator was seen flying above the town. He came from the direction of Knocke. The Germans, under the impression that he was a German, allowed him to pass unmolested. Later the British aviator was seen at Dixmude and Nieupoort.

"Reuter's" Amsterdam correspondent reported on Friday as follows:—"It is stated from Sluis that a French airman who dropped bombs yesterday at Bruges missed the oil-tanks but killed eight marines. It is also reported that bombs dropped by airmen have destroyed a portion of the tramline between Bruges and Zeebrugge." Reports from Belgium via Holland plus a newsagency are not necessarily accurate in all details.

The "Times" correspondent in Northern France reported on November 3rd:—"A member of the Royal Flying Corps on Sunday, armed with a number of bombs, circled over Thielt, which has been for some days the home of the Headquarters Staff of the German Army. Though he did not know it, the Kaiser had left barely a quarter of an hour before. The Kaiser, who was dressed in a green uniform, arrived by motor-car at Thielt at half-past 11 in the morning accompanied by a staff of about 40 officers, whose brilliant uniforms showed no signs of the ravages of the fierce warfare taking place a few miles away. He was warmly received by the soldiers as he went to the Casino, where he dined with the officers. My informant was an eye-witness of the arrival and departure of the Kaiser. He declares that the Kaiser looked particularly severe and seemed to be feeling the effect of his cares and responsibilities. He left Thielt at half-past 1 and it was just a quarter of an hour later that a British monoplane arrived and dropped several bombs within a short distance of the spot where the Kaiser had been receiving the hospitality of the Headquarters Staff. Three bombs fell into the market-place, one on the town hall, and one on the Palace de Justice. Two German soldiers were killed and a considerable amount of damage was done to property. But the people took the monoplane's visit quite calmly. Since the war started they have had several of these unwelcome visitors overhead, first from one side and then from the other."

[A later report from the same correspondent says that the Kaiser arrived at 5 p.m., had dinner in a hurry and left. Twenty minutes later the bomb fell on the place where he dined, smashed the room where his baggage was stored, and killed two of his A.D.C.'s. Considering that sunset was then

at about 4.30 p.m. it would be nearly dark at 5.30, and pitch dark at 6 p.m.—the earliest time the bomb could have been dropped—so the story is obviously a "fake."—Ed.]

The Bruges correspondent of the "Nieuwe Rotterdamse Courant" states that aeroplane sheds at Knaffelaere have been taken down by the Germans and sent to a destination unknown. Troops are moving from Bruges in an easterly direction, and machine-guns have been mounted on all towers in the town.

Mr. Leonard Spray, of the "Telegraph," writing from the Belgian frontier last Thursday night, reports:—

"Important works are being carried out in Bruges and the surrounding district. The most important of these is the construction of a Zeppelin shed. This is being erected, with tremendous haste, at a point a little outside the town, to the south-east.

"In the erection of this shed a serious obstacle has been encountered. A work of such magnitude necessitates the employment of hundreds of carpenters and other artisans. Civilians were commanded to assist in the task. Most of them, however, refused to do so, their reason being the fear of the shed being made a mark for bombs thrown from aeroplanes. . . . As a matter of fact, the fear was, to a certain extent, well founded. The Allies' aeroplanes have taken a considerable part in the recent operations. They have been of invaluable service in reconnaissance work. From a distant base, which must not be mentioned, both ordinary machines and seaplanes have flown along the coast-line held by the enemy, and made many incursions far inland. Easily locating the German positions, they have been extremely useful, among other things, in directing the fire of the naval guns.

"Incidentally, they have done a certain amount of bomb-throwing. Two days ago one airman flew over Bruges with the object of destroying tanks where the Germans have stored a large quantity of oil. Heavy mist made the operation very difficult, and the bomb missed its mark by about two hundred yards. It was fired at unsuccessfully by machine-guns.

"It also escaped an aerial enemy. Returning, it was clearly visible from the frontier, and I saw a Taube machine in pursuit. The Allies' aeroplane, however, was much swifter, and after a vain chase the German machine turned and disappeared towards Bruges.

"Evidently the attempt to destroy their oil supplies gave the Germans a shock, for I learnt yesterday that they moved them to other tanks at the new Bruges docks."

The special correspondent of the "Times" at Amsterdam, under date November 4th, says: "Some airmen who on Monday flew over Valkenswaard and Weert are said to have been Englishmen. For the people of Bruges it is no secret that the Germans are slowly compelled to retire. Moreover, they hear the cannonade daily coming near and see the aeroplanes of the Allies fly over Bruges itself, while the German guns vainly endeavour to bring them down."

The correspondent of the "Telegraph" at Rotterdam sent an extraordinary telegram on Sunday, 8th, in which he says that "he wandered on, nobody asking for his pass, until he reached the German positions. What he first noticed was that the German aeroplanes now throw out smoke clouds to hide themselves when they are heavily fired upon by the enemy. The English and French aeroplanes took their chance, and though he saw many of them shot at and they seemed to be everywhere, not a single one, during the time he was watching, was brought down. As to the fine work they were doing he saw several examples. German batteries which changed their position because they were under too heavy fire discovered, as soon as they found a new point, that they were still under the dominance of the other side. Some German batteries have been silenced by the first four shots fired at them."

[The engines of the German aeroplanes must be very badly over-lubricated! A cloud with a thousand foot side would require a billion cubic feet of smoke, and the scout would have to manoeuvre quickly to remain hidden even in that!—Ed.]

The "Telegraph" correspondent reported on Sunday, November 1st:—"For eighty minutes a French biplane has patrolled the German lines, and a Morane-Saulnier has twice disappeared and reappeared in the grey clouds above the enemy. The rapid monoplane flew higher than his colleague,

and received no attention from the invader, but the steady-flying biplane, so we counted, had eighty-six shrapnel sent after him. Of these, two only were in any proximity to the airman; the other eighty-four were execrable shots.

"Over Furnes a Taube made an early morning call, and was also saluted with shrapnel. But he was at a respectful height, and he also flew away undamaged, while a dozen puffs of smoke hung long in the quiet morning air. Then—it was just at 9.20—we suddenly heard the whine of a heavy shell, and a black cloud arose in the garden of a little cottage up the road. Presumably the Taube had noticed the presence of a little group of men and horses here, and had given the position to the German artillerymen. They had worked out the range to twenty yards, and took a chance with a 6 in. shell. But these twenty yards were sufficient to save the Belgians, and when I left, two hours later, the little group was still standing quietly around the front of the cottage."

Mr. Alfred Stead, in the "Express" of November 4th, reporting on the review of French and Belgian troops at Furnes by the King of the Belgians and M. Poincaré, says:—"Suddenly there came an explosion. A Taube is seen lazily flying overhead. It has thrown a bomb which has fallen just outside the square. War has obtruded its horrid but familiar face into the peaceful scene. Happily the aviators did not succeed in getting the square.

"The military array in the square is quite unperturbed; a Taube bomb is a little thing after the experiences of every-day life. A great Voisin biplane sails up over a corner of the square, on guard. It is very low, and it seems black against the sky. Another aeroplane descends to the flying ground, and while the distinguished visitors are in the town hall and the band plays martial airs, aeroplanes fly over the square and the town, slowly and surely. One indeed seems almost not to move at all. All have mitrailleuses. Every one keeps looking up because the noise of aeroplane engines is incessant—when the music allows us to hear them, that is—and a German engine makes the same noise as a Belgian or French. [Here Mr. Stead shows his lack of experience in aerial matters. The steady bang of a 6-cylinder Mercédès is very different from the roar of a Gnome or the crackle of a Renault or the rattle of the Salmsons used on the Voisins.—Ed.]

Mr. L. A. Jones, of the "Chronicle," reported on November 3rd as follows:—"From a member of the Flying Corps I have gathered a few details. The railway line between Bruges and the Belgian border has been destroyed by bombs, and part of the railway station at Bruges has been wrecked. It will take the Germans at least six days to repair the havoc. Large numbers of Germans are concentrated round Bruges, but the coast line is now held by a comparatively small force supported by heavy artillery. During the flight into the interior he was under continual shrapnel fire, but he never rose higher than 3,000 ft., though the range of shrapnel is fully 6,000."

The "Morning Post" correspondent in Holland reports as follows on November 9th, on the authority of a Belgian:—

"Two guns to shoot at aeroplanes have been placed in the belfry at Bruges. Despite these precautions, the air machines of the Allies continue to make their appearance in the vicinity

of the town. A British hydroplane (hydro-aeroplane) was seen there yesterday. So far as can be learned, the oil tanks and the 'Zeppelin shed' remain intact, but no doubt much useful information has been gleaned by the reconnaissance."

The "Express" of November 7th states that there are no Zeppelin or aeroplane hangars being constructed at Liège, only trenches, armoured blockhouses, gun emplacements, and works. This seems more like the truth than some stories.

A correspondent in Oxford writes that an interesting patient in hospital there is M. Louis Lambert, 2nd Lieutenant in the Belgian Flying Corps, and son of M. Léon Lambert, Burgomaster of Namur. M. Lambert was flying on August 22nd between Liège and Namur when he was fired at by the Germans. He received 33 bullets through the fabric of his machine and the 34th hit him in the leg, another just missing his shoulder at the same time. He then flew very high and had to keep going for an hour before he could return to the Belgian lines and land at Belgrade, near Namur. He managed to land without further damage to himself, but had lost so much blood and was so weak that he could not properly control his machine, a Maurice Farman, which was wrecked. As there was no ambulance about he was placed on a stretcher and two hours afterwards a piece of shrapnel struck him in the chest. Later on he was taken to Namur, thence to Antwerp, and more recently to Oxford. He was recovering nicely, but had a relapse, for when he began to walk the wound in his chest reopened. One of M. Lambert's brothers has been killed during the war and another brother was severely wounded, but is now cured. If readers of THE AEROPLANE among the R.F.C. or the R.N.A.S. in Belgium should come across any of M. Lambert's people, will they please give them this news of him?

SWEDEN.

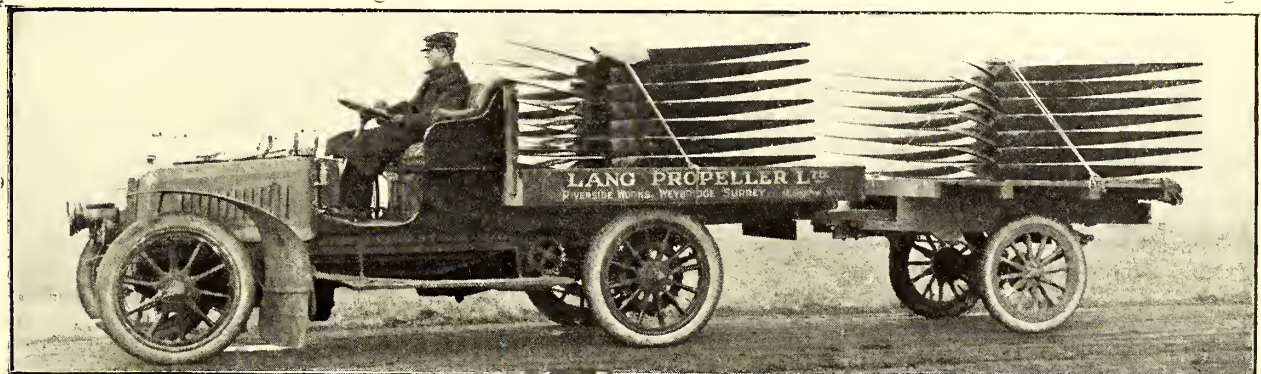
According to a message from Stockholm, Sweden is busy building a fleet of fifty aeroplanes. Two hundred aviators are also being trained. It will be remembered that Sweden's senior Service aviator is Naval-Lieutenant Carl Olaf Dahlbeck, who was trained at the Grahame-White School at Hendon.

MONTENEGRO.

A number of Austrian aeroplanes threw bombs on Anivari on November 1st. About a dozen bombs were aimed at a French transport in the port, laden with munitions and under the escort of three torpedo-boats, but fortunately without effect. Twenty bombs fell near the Palace and the Prefecture, and some Italian buildings, the latter being partially damaged. The Royal yacht was also the object of attack, but the bomb fell at the side of the vessel. In no case was there any loss of life. French and Montenegrin artillery was directed against the aeroplanes, but they had risen too high to be hit.

U.S.A.

The American cross-country record was held by Mr. C. Murvin Wood for over a year, with his flight from Hempstead, L.I., to Gaithersburg, Md., near Washington, D.C.—a distance of 225 miles; but it was handsomely beaten recently by Mr. W. C. Robinson, who flew from Des Moines, Ia., to Kentland, Ind., on a monoplane of his own construction. The distance is 305 miles.



MUNITIONS OF WAR.—A day's deliveries of standard type propellers from Lang Propellers Ltd., for the Army.

The Farnborough Fatality.

It is with great regret that one records the death, on November 5th, of Mr. E. T. Busk, late of the staff of the Royal Aircraft Factory. Mr. Busk was making a test flight at Farnborough when the machine caught fire at a height of about 1,000 feet, and before he was able to reach the ground he was burnt to death. No definite particulars of the accident are available at the moment.

Mr. Busk was 28 years of age and was educated at King's College, Cambridge. Though a particularly skilful aviator, he never took his aviator's certificate, for, as he said, it was never his intention to fly in competition, and he merely flew in the interests of scientific research. He combined in a high degree the qualities of an aviator and a real scientist, and did a large amount of very valuable work in the experiments which resulted in the production of the inherently stable type of B.E. biplane which was produced early this year by the R.A.F. This machine is, in fact, the first successful modification of Mr. Geoffrey de Havilland's original B.E. design, and the credit for that success must be given to the late Mr. Busk.

His death constitutes a very real loss to the progress of practical aviation. His younger brother is an officer of the R.N.A.S., and to him and his other relatives one offers sincere sympathy in their loss.

The late Mr. Busk, who held a commission in a Territorial Battalion, but was not a military aviator, as stated in some papers, was buried, with military honours, on Monday last.

So far as can be gathered, the machine was a B.E. with a Renault engine, in which case the assumption is that the carburettor caught fire, as has happened on previous occasions, and that the petrol-pipe gave way immediately. A death of this sort has been foretold by the writer over and over again, yet no real precautions against fire are taken by either aeroplane or engine designers—not even by the Royal Aircraft Factory. One can only hope that poor Mr. Busk's fate may be a lesson.—C. G. G.

The R.N.A.S. Comforts Fund.

The following subscriptions have been received during the past week to the R.N.A.S. Comforts Fund:—Mrs. Pickles, £5; Mrs. Sueter (2nd contribution), £5; Blériot Mechanics, £1 4s.; W. Warnford, £1; Mr. H. Thomas (Vickers Ltd., Crayford), £1; A.B.C. Engine Co., £1; Miss E. Reynolds, 10s.; Employees, Mann & Grimmer, 10s.; Vickers Mechanics, Erith (per Mr. Savage), 4th contribution, 8s. 6d.; Fabaero, 5s.; Mr. Withington, 4s.; Mr. Jenkins, 2s.; total, £16 4s. 6d.

Added to last week's total this brings the amount to £107 8s. 10d. Much more money is needed, for present contributions only suffice for about half the number of men who need to be supplied with comforts abroad and at the coast defence stations. Also many more woollen garments are needed. Will readers of this paper please hasten their work, and send even small quantities at a time to Mrs. Sueter, Howe Hill, Watlington, Oxon?

It must not be forgotten in one's enthusiasm for the magnificent work done by the R.F.C. that they were Naval aeroplanes and pilots which were the first of the King's armed forces to invade Germany, and that those raids first shook the faith of the German nation in their invincibility. Also, though the time has not yet come to describe their feats, the R.N.A.S. seaplanes in the North Sea have done work as valuable in its way as anything done on land. It is essential that the mechanics working on those machines should be as comfortable and healthy as the men of the R.F.C. if the lives of the pilots are to be as safe. Therefore, let us see much bigger contributions to this fund in the near future. The small firms are setting a fine example. What about the big ones?

R.F.C. Comforts.

One hears with gratification that the various "woollies" sent to the R.F.C. on active service are arriving safely and in such quantities that there is already enough to go round without the men having to draw lots for them. Nevertheless, further large supplies are needed, for the best of "woollies" wear out, or become unfit to wear (laundries being scarce in the war area). Therefore, one hopes that readers of this paper will hurry along further supplies to Lady Henderson, 8, Chesterfield Gardens, S.W.

SCHOOLS AT WORK—III.

Although the production of new aeroplanes for the R.F.C. and R.N.A.S. is perhaps at the moment the most important function of the aeroplane industry, the training of new pilots to increase the personnel is very nearly as important, and the Admiralty has adopted a very wise policy in encouraging certain existing schools by sending direct appointment officers there for the preliminary portion of their training. The Eastbourne Aviation Company has always had a high reputation for the thoroughness with which tuition is carried on there, and Mr. F. B. Fowler, the chief of the firm, makes it his guiding principle that when a pupil passes for his certificate at the school he shall really know how to fly, and not merely scrape through the certificate tests. Several of the best fliers in the Naval Air Service learned to fly at Eastbourne, and, therefore, it is not surprising that the school should be among those officially approved.

During the past week-end the writer paid a short visit to the Eastbourne Aerodrome, and though the first batch of Naval pupils had just passed out of the school, enough was going on to show the care taken with those under instruction. In the past, at some schools, at any rate, the certificate rules were very loosely interpreted. For example, the figure-of-eight test simply meant a sequence of alternate right and left turns, which might be made anywhere over the aerodrome or the surrounding landscape. At Eastbourne, on the contrary, there are two pylons set up, the regulation distance apart, and the pupils have to do their eights round those pylons, and, therefore, they learn to stick to a properly delimited course.

Similarly, at some schools the "vol plané" test, which is supposed to consist in landing from above 300 feet with the engine switched off, generally amounts to struggling up to the requisite height, coming down with the engine running, and then switching off when flying level about ten feet from the ground. This method appears to Mr. Fowler as merely sticking to the letter of the rules, and avoiding the spirit. His pupils have to switch off at more than 300 feet, and land without switching on again. The writer saw a pupil going for this test the other day, and his landing was one of the prettiest one could wish to see. No experienced pilot could have done it better, for the machine never deviated from its straight path, laterally or vertically, till the pilot flattened out to land, and when he touched ground there was not a sign of bouncing and the machine stopped dead in little more than its own length. Two other pupils who were out the same evening, though not doing a glide for the full 300 feet, landed with almost equal precision, showing that the system of training is thoroughly sound all round.

Possibly the skill of the Eastbourne pupils may be partly due to a healthy fear of over-running their mark and falling into one of the dykes which intersect the ground, but the results, in any case, are unusually good. A further proof of the soundness of the training is given by the fact that Mr. Fowler's assistant-instructor, Mr. Hardstaff, was himself a pupil at Eastbourne only a short while ago, and yet he is already as sound a box-kite pilot as any in the country. He shows excellent judgment in climbing and cornering, and his landings—at any rate, those the writer saw—are quite perfect. Incidentally, one gathers that Mr. Hardstaff applied some time ago for a job as a Service pilot, and if he is not ultimately accepted he may, at any rate, console himself with the idea that he is doing very useful service by carrying out his instructional work with the care and thoroughness which he shows.

The machines used are box-kites of the early Henri Farman type, and dubious original parentage, with 50-h.p. Gnomes. They have been practically built throughout at Eastbourne, and though the writer is no particular admirer of the "single-surface-lifting-tail" type, it must be admitted that, of their type, they are extremely good, lifting well and handling in a manner which convinces one that they have been properly tuned up by someone who knows his business, and showing a marked contrast to some machines of similar type. The workmanship in them is quite sound, and gives one every confidence in their reliability, an important point when pupils are sent to a school instead of being left to please themselves.

While in the district the writer was permitted to inspect the

big twin-tractor seaplane built by the Eastbourne Co. for the "Seaplane Circuit." It has already been described in this paper, and a sketch of it has been published also, therefore one need only say that it is one of the most workmanlike jobs turned out in this country. The general design is novel, but the principle is very good. The machine is so big that the 100-h.p. Green engine seems a trifle small for it, but the propellers get round at the speed for which they were designed, so, presumably, it is enough. Some slight alterations, affecting its floating position, have still to be made, but it has every appearance of being a real flying machine. The detail work is beautifully carried out, and the general construction gives an impression of immense strength, although the machine is not unduly heavy. Its trials should be of more than ordinary interest, and one wishes it every success, for as a type it deserves encouragement.

The E.A.C. workshops all seem very busy building aeroplanes of one kind or another, and one hopes that Mr. Fowler's efforts of the past two or three years will duly meet with complete success.—C. G. G.

The Promised German Invasion.

Inhabitants of Dover have, of course, already been surprised and entertained by the following news, but it must be placed on record for the benefit of posterity. The "Cologne Gazette" states:—

"As communications from the field inform us, a German warplane attached to the troops operating in Northern France (pilot, Reserve Lieutenant Caspar, of the 5th Dragoons, with Lieutenant Roos, of the 75th Infantry, as observer) flew the Channel on October 26th and dropped two bombs north of Dover. After a 5½-hour flight the aeroplane returned safely to its base."

Other details of the same exploit are supplied to the "Fränkische Zeitung" by an officer in the field, as follows:—

"Last night we had a jolly celebration. We were guests of a flying battalion, which was welcoming two of our airmen on their return from London. These officers have thrown bombs on Dover."

[The bombs in question must have been fitted with R.A.F. silencers, for, so far as can be gathered, no one in England heard them.—Ed.]

Various papers stated on November 7th that a military expert who has paid a visit to works in London at which many Germans are employed describes them as "nothing more or less than tremendously strong fortifications, which could dominate some of the most vital parts of London." It is stated that after a thorough examination of the premises by detectives and military experts nearly a month ago, "exhaustive reports were sent to the War Office and the Home Office, with a strong recommendation for immediate action. Nothing, however, has yet been done to remove this menace to London." Which seems eminently sensible to any sane person.

All the buildings are said to be of reinforced concrete of a strength and thickness altogether out of proportion to the nature of the work carried on in the factory.

The most amusing portion of the story says:—"Another significant fact is that some of the buildings could be used as aeroplane hangars. Every facility is offered for the landing and mooring of airships, and the existence of powerful electrical plant on the premises would render it easy to fit up wireless telegraphy apparatus." Just what use buildings which "could" be used as aeroplane hangars would be without a landing ground is not explained, and, of course, any "electrical plant" anywhere might be useful in fitting up wireless.

How to Tell a Story.

The following description, taken from the report of the "Daily News" correspondent in France on November 5th, indicates a good piece of work, though the telling of the story is sufficiently funny to stand reproduction:—

"I saw nothing of the German machines: too many of their wings have been clipped the last week or two for their venturing anywhere within range of our snipers, our pom-pom shells, and the new anti-aircraft shells, packed with light shrapnel, which have been doing so much aerial damage of late.

"Our own air work was magnificently daring. A crack flier of our Army is a young — officer [(?) Naval.—Ed.] Every day and all day—from dawn to sunset—he is up and about, doing the most wonderful things with the utmost abandon and dare-devilry. The other morning, up ahead of the lark, he volplaned from a great height like a falling arrow in the midst of the German lines, as though he intended to settle among them—or, at least, make a brief morning call for breakfast. The Germans were too astonished for the moment to do anything but gasp and gape at him. He was not only within point-blank range of infantry fire; a wide-calibre— [What is "wide" calibre?—Ed.] popgun could have easily plugged him. He impudently stopped his engine, dropped half a dozen 'puffs' (as our Tommies call the aeroplane bombs) into a cavalry cluster, waved his hand, and off and up he went again. Hundreds of rifle shots whirred around him as he fled; two of them struck him, and three minutes later he was down in the British lines once more with blood trickling through the rents in his tunic. He was patched up and bandaged, had a good hearty lunch, and before tea time he was up again in one of his mad frolics in the air.

"'Surely you've had enough for one day,' said General —. 'Have a rest at least until to-morrow. We don't want to lose these matinee performances of yours; they're too fine for anything!'

"But the young officer jammed his armoured (sic) helmet on his head and said he couldn't resist it. It was great fun and kept him fit. Of course, if the General absolutely refused, then—

"'By all means go if you are so keen on it,' replied the General with a laugh. So off he went, and the General and his staff watched the show. This particular afternoon the young officer excelled himself. An extremely well-screened German battery was doing nasty work from behind a slight rise at the back of the enemy's trenches. This was the airman's quarry. Up and up he went in quick, climbing spirals; and when he was at a height of about two thousand feet he poised—[The aeroplane which "poises" is our great secret which we have hitherto kept from the Germans.—Ed.]—for a spell to spot the lurking place of the battery. His first signal was — gunners to plant their shells immediately below him. They fired; the shells fell some distance to the right and did no more damage than to dismantle further an already dismantled camp. The airman next signalled to tell the range-finders to swing their guns—[Of course, it is always the range-finders who "swing" the guns. Another of the secrets of our success given away to the enemy!—Ed.]—more to the left. Again it was too far. Again he signalled, and this time the first of our shells wrecked the limber of the foremost Prussian gun, smashing up horses and men alike.

"Good! Instantly the airman indicated that the range had been found at last, and then shell after shell burst over and among the battery which had been flogging us so mercilessly earlier in the day. In five minutes all that was left of it broke away from the cunning screen, at the making of which so much craft had been employed—broke away and fled across country.

"The General, who had been watching this with tremendous interest through his field glasses, clapped his hands, and danced to and fro along the verandah.—[Imitation Mordkin. Very difficult.—Ed.]—'Splendid, magnificent!' he cried. 'The best show I've ever witnessed. That man must have a heart of steel in a body of iron!' Personally, the General congratulated the laughing officer when he came down to mother earth once more, tired, but still jubilant. He congratulated him and shook his hand 'You're almost too good to last!' he said. The airman only laughed."

[But not half so much as he will when he reads the "News" man's story about him. Probably the other aviators will recognise him, so one asks them not to pull his leg.—Ed.]

A Welcome Recognition.

A note has been received from R.F.C. Headquarters Camp saying that copies of THE AEROPLANE arrive regularly, and are much appreciated. The editor thanks the R.F.C. for this kindly recognition of the paper's efforts to entertain those who are doing such fine work abroad, as well as to instruct those who remain at home.

A New Business Venture.

Notification has been received that the Northern Aircraft Company, Limited, of Newcastle-upon-Tyne, is taking over the whole property of the Lakes Flying Company at Windermere, and is opening a really well equipped waterplane school at once, under the management of Mr. Rowland Ding. In addition, the firm is starting on a large scale to build land machines in their own works at Bowness-on-Windermere, where a competent staff which has already been engaged is being rapidly increased for this work.

The waterplane school will start with an equipment of four machines, two monoplanes and two biplanes. The joint managing directors of the concern, Messrs. Arthur and Reginald Lord, and the general manager, Mr. Ding, are to be congratulated on their enterprise in starting this new activity, for a waterplane school on Windermere should provide very useful preliminary training for seaplane pilots.

Pupils taking their certificates there on waterplanes would quickly pick up the handling of land machines if required to do so, and it might be possible for the Admiralty to support the school, either by sending probationary flight lieutenants there for their preliminary training, or even by allowing junior officers who have already taken their certificates on land machines to acquire experience of water flying at this school. Instead of sending them straight away to one of the Naval Air Stations they might be sent to Windermere, where their opportunities for practice would probably be much more frequent, owing to the fact that it is generally possible to practise on the comparatively calm water of Windermere when at the same time there is quite an awkward sea running on the coast. The venture deserves success and everyone will wish it well.

A Warning.

The "Times," on October 30th, said:—"We learn that experts have very good reason to believe that attempts are being made, or are likely to be made, by firms in Copenhagen to purchase in this country silk piece goods which may be used for German airships. There is accordingly a movement among merchants and manufacturers in this country to prevent the supply of silk piece goods to Copenhagen or other Scandinavian merchants, and it is to be hoped that every British house connected with the industry will support the movement and recognise the danger of executing orders of the kind indicated."

To this one may add that supplies of linen for covering aeroplanes are possibly being shipped by the same routes. Rubberised cotton fabric is also largely used for balloons and airships.

A Modest Firm.

The following particulars are taken from the "Daily Register," compiled by Jordan and Sons, Ltd., Chancery Lane, W.C.

Zeppelin Company, Ltd. (138,026).—Finsbury Pavement House, E.C. Registered October 10th. To experiment with balloons, aeroplanes, hydroplanes, airships and aerostats of every description, and in the science of aerostatics and aviation, and to carry on business of mechanically-driven vehicles, etc. Nominal capital, £100, in £1 shares. Directors: A. H. Fellows, 154-6, Finsbury Pavement House, E.C., Accountant. Subscribers (1 share each). A. H. Fellows and J. Wright, 8, Stormont Road, Battersea, S.W., Clerk.

[The capital seems quite moderate.—Ed.]

Southampton District.

On Saturday and Sunday there was some very good flying by land machines, flying from the coast towards Salisbury, their course taking them over Hamble each time. The Sopwith bat-boat made a splendid flight on Sunday over Southampton Water, and it has been much used all the week.

Sopwith tractors also seem to be very busy, and a good deal

of work has been done on other machines such as Avros, Wights and Maurice Farman seaplanes.

On Saturday the body of the late Mr. Alston, who was drowned on the previous Sunday, was found still strapped in his seat among the wreckage of the machine. It was brought to Southampton for burial.

An inquest was held at Netley on Monday. It was stated that the deceased was chief designer for the Sopwith Aviation Company, and designed the machine which caused his death. The machine was one of a new type and quite experimental.

Mr. Victor Mahl, the pilot, said they were making a trial flight when the machine dived into the water whilst travelling at a speed of about 100 miles an hour. A verdict of "Accidental death" was returned.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Windy	Fair	Windy	Windy	Fair	Misty	Fair
South Coast	Windy Wet	Windy	Wind Rain	Rain	Fog Rain	Fine	Fine
East Coast ...	Wind	Wind	Wind Rain	Fog	Fog to Fine	Fog to Fine	Fog to Fine

Eastbourne.—AT E.A.C. SCHOOL: Instructors: Messrs. F. B. Fowler and R. C. Hardstaff. Pupils 8's or circs.: Flt. Sub-Lieuts Iron (62 mins.), Huskisson (51), Mr. Bass-Sutton. Flt. Sub-Lieut. Huskisson completed certificate tests. Machines: E.A.C. biplanes.

Hendon.—AT THE GRAHAME-WHITE SCHOOL.—Instructors: Messrs. Manton, Winter, Shepherd, and Russell. Pupils with instructor: Prob. Flt. Sub-Lieuts. Barnes, Bray, Driscoll, Field, Livock, Price, Watson, Young, Cooper, Hodson, Wakeley, and Mr. Greenwood. Straights alone: Prob. Flt. Sub-Lieut. Groves and Mr. Stalker. 8's or circs.: Prob. Flt. Sub-Lieut. Ffield, and Messrs. Carabajal and Easter. Machines: Grahame-White biplanes.

AT LONDON AND PROVINCIAL AVIATION CO. SCHOOL.—Instructors: Messrs. W. T. Warren and M. G. Smiles. Pupils doing straights or rolling alone: Messrs. Moore, Abel, Derwin and White. Machine: L. and P. biplane.

AT THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. R. Desoutter and R. M. Murray. Pupils rolling: Flt. Sub-Lieuts. Bird and Trench, Messrs. Barfield, Stevens, Burke and Williams. 8's and circs.: Mr. Ivermee. Machines: Three 35-h.p. Caudron biplanes. Mr. Ivermee successfully passed for tests A. and B. of the brevet.

AT THE HALL FLYING SCHOOL.—Instructor: Mr. J. L. Hall. Pupils doing straights: Mr. G. Davy (18), Mr. R. Pinniger (3). 8's or circs.: J. Rose (five 8's at 1,000 ft.), Dr. Christie (107 mins. at 1,000 to 2,500 ft.), T. W. Abbott (12 mins. at 550 ft.). Mr. J. Rose did excellent brevet flights with vol plane landing from 1,550 ft. on barograph. Machines: Three Hall tractor biplanes. On Sunday Mr. Jack Alcock went out on the new 45 Anzani tractor and made a short flight and expressed himself as very satisfied with its flying.

AT THE BEATTY SCHOOL.—Instructors: Messrs. Geo. W. Beatty and W. Roche-Kelly. Pupils with instr.: Messrs. Virgilio (30 mins.), Gardner (10), Parker (30), Whitehead (30), Beynon (25), Moore (5), Anstey Chave (15), Donald (15), and Wainwright (5). Mr. Lionel Franklin Beynon took his certificate on Thursday in very fine style. Machines: "Dual" controlled Beatty-Wright propeller biplanes.

Shoreham.—AT PASHLEY BROS. AND HALE SCHOOL: Instructors: Messrs. E. and C. Pashley. Pupils with instructor: Messrs. J. Sibley and J. Morrison. 8's or circs.: Messrs. J. Woodhouse, T. Cole, C. Winchester and Menelas Babiotis. Machines: Pashley and H. Farman biplanes.

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THE AEROPLANE



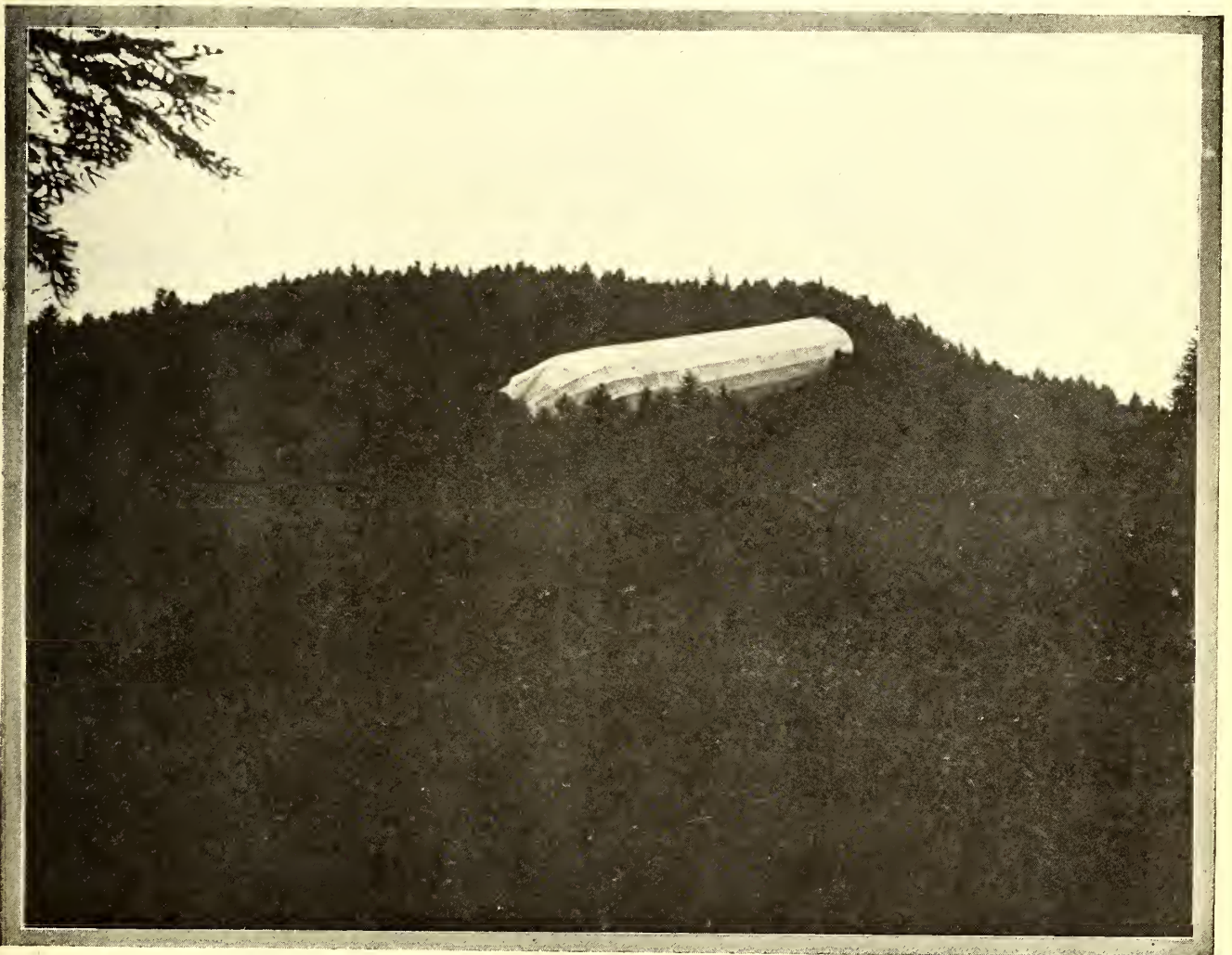
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.
AS A NEWSPAPER.]

WEDNESDAY, NOVEMBER 18, 1914.

No. 21

"A BROKEN REED."



The first Zeppelin definitely known to be destroyed in the war. The photograph was taken near Epinal, where the airship was brought down in the forest of Badonvillers by French artillery under very unusual circumstances fully described in the French Naval and Military Notes in this issue. It may be seen that the stern of the ship is badly smashed and has crumpled down among the trees.

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Mistaken Kindness.

Faith, Hope and Charity might be grouped into one as the leading vice of the British People. "Faith in our Land's long-suffering star," as Mr. Kipling puts it: "Hoping for the best" in a casual kind of way, without doing anything strenuous to put things right: and Charity of an equally casual sort, which ranges from giving pennies to an obviously drink-sodden humbug up to letting people keep well-paid jobs when they have proved their ineptitude. "And the greatest of these is Charity."

Charity leads to all sorts of mistaken kindness, and it is a vice particularly prevalent among our military aristocracy. If a man is doing his feeble best there is always someone to say, "Give him another chance," even if he has already made a fool of himself half a dozen times before and has cost the country hundreds of lives or thousands of pounds in the process. If a man is personally a good chap, or has charming relations, or is friendly with really nice people, he is allowed to hang on in a job when his presence is a stumbling-block to progress.

Once in a while a Kitchener comes along, who cares for nothing but efficiency, and then there is a general speeding up. A few Courts Martial are held, some cashiering is done here and there, a few people are "permitted to resign" their commissions, others have their tails officially twisted, and the machine begins to move more quickly. Unfortunately one Kitchener is not enough for a whole army and navy, and there are always a number of dear kindly gentlemen who hate to hurt the feelings of other people, and so cover up the mistakes of subordinates—or co-ordinates—and progress is not as rapid as it might be.

Happily we have in the King's Services a number of highly efficient officers who manage to get their own work pushed through in spite of the drag of other departments, or of other officers in their own departments, and so we always keep a trifle ahead of where we ought to be—considering our pet vice, Charity—but if only we could eliminate mistaken kindness from our outfit we should progress very much faster, and more rapid progress in war time means saving thousands of lives, and millions of pounds per week.

Cases in Point.

Presumably most people who have followed the progress of aviation will admit that no one has done more to help the aeroplane industry in its fight against the prejudices of those in authority and the machinations of self-interested Government employees than have those associated with this paper, therefore I can claim to have a clear conscience when I say that the authorities are showing mistaken kindness in some directions in dealing with the industry to-day. Fortunately larger quantities of aeroplanes are being delivered than we had any right to expect, considering how the industry has been treated in the past, and our pilots are well supplied with machines, but we want more machines still, and more and more. And we want still better machines, for, as I pointed out a week or so ago, and as Mr. Whittaker shrewdly prophesied in his articles at the beginning of the war, the Germans are now using aeroplanes of a better class than those which

they first brought into the field, namely, the big-powered record-breaking biplanes which the best German firms produced early this year. This was only to be expected, but no apparent steps were taken to anticipate such action, and little real encouragement was given to the British constructors to improve their machines till war actually broke out.

Now, after practically three months' war, we have found out which are our best aeroplanes, and which are of least use. The obvious thing to do seems to be to order quantities of the best machines, scrap the others, and instruct the makers of the latter to manufacture to the best people's designs. Instead of that we find both the Navy and Army still ordering machines which are fairly useless for war, and really only fit for pupils' use, or for exhibition fliers. Also, in such machines the engines are wasted because they might be used on machines fit for active service. Of course, it is done with the best intention in the world, namely, to encourage the production of aeroplanes, but it is mistaken kindness.

As a case in point, a number of standard Blériots have been ordered. They are highly excellent machines for ordinary touring across country, in fact the chassis is the best in the world for rough landing, but their speed is only about 70 miles an hour, and their climbing rate is hopeless when compared with modern biplanes. Yet the French Blériot firm has built some very successful "scouts" to the Sopwith design, and these might have been ordered instead; or even Blériot "parasol" single-seaters.

Apparently with the idea of getting something that climbs somewhat faster someone has also given out some orders for ordinary type Morane monoplanes. Now the standard pattern Morane is about the most useless machine anyone could design for military purposes, though the "parasol," which has not been ordered, has its uses. For trick fliers the standard type is all very well, but the chassis is so bad that even such a pilot as Brindejone des Moulinais turns a Morane over about once out of every dozen landings outside of an aerodrome. It is utterly impossible to see anything out of it unless the pilot stands it on its nose, or on one wing-tip. It is useless as a bomb-dropper or passenger carrier. It cannot land slowly—at least no one except the late Mr. Hamel ever did land one slowly, and even he only did so once in a while. It is not efficient, for its speed and climb are both easily beaten by various biplanes of similar power. Altogether, nothing but mistaken kindness could possibly have prompted the giving out of such an order—except, perhaps, personal influence, which hardly seems likely.

One could quote other instances, but these illustrate the point sufficiently.

The Suggested Remedy.

Now the obvious remedy for this sort of thing seems to be for the authorities to fix on the types which have done best on active service, and, if the original designer cannot turn them out fast enough, have them made elsewhere and pay the designer a decent royalty.

If the said maker objects that the designs are his

own, well! this is war time and he must put up with it. In any case he is not likely to object to receiving money for work he has not done, so long as his own works are occupied to the limit of their capacity.

If the military authorities could go round commandeering people's pet horses for cavalry, guns, and transport, at the outbreak of war, surely they can commandeer designs for aeroplanes, if those designs prove, as some of them have proved, better than those turned out by the Government's own tame geniuses.

Again, there is the possible objection that makers of unacceptable designs might refuse to take orders for machines to designs other than their own. Very well then, commandeer their works and men, and turn them onto the approved designs. There seems no reason to believe that the men would strike if put to work on different designs, and if they did, one can always apply martial law. Also, as long as reasonable profits are allowed, it does not appear that any injustice would be done to the shareholders, or the individual who might be financing such a firm. In fact, such action is better for them, because they may make enough money to allow them to improve their own designs, whereas so long as the works are allowed to go on working at obsolete patterns the works manager is not likely to make improvements.

If the "trade" is going to get its back up now that it suddenly finds itself popular with the authorities who contemned it a few months ago, it must be quietly but firmly sat upon—for this is war time.

A Fair Objection.

There are, however, certain legitimate objections the "trade" may raise to some possible official actions. For instance, if the authorities propose that certain parts of a maker's machine should be made by outside firms, in order to hasten delivery, he may reasonably object that he is not going to take responsibility for any work done outside his own walls. For his own credit he may insist on every part of every machine he sends out of his shop being all his own work. But, if the authorities simply say they intend to have some machines to his design built altogether outside his works and will not blame him if anything goes wrong, then it is his duty to the country to assist the contractor who undertakes to build those machines, by putting him up to any tricks in manufacture or tuning up which he has learned by experience. So long as his own works are fully employed his duty to his financial backers is fulfilled, and anyhow his duty to his country comes first.

In any case, it is mistaken kindness on the part of the authorities to permit any obstacles to be placed in the way of their obtaining just the machine they want in any quantities they desire.

At the same time, it would be unwise to try to standardise absolutely, and every encouragement should be given to the production of new and improved designs, so long as their production does not interfere with deliveries of machines which have already proved their worth, for such new designs may be of high value as the war progresses into new phases. Plenty of use can be found for such machines in the various places in this country where experiments are being carried on by those officers who are remaining at home to train the new pilots. As has been pointed out on various occasions recently, standardisation can be carried too far.

The proper policy is to standardise those machines which have proved their merit, to eliminate ruthlessly those which do not come up to the required standard, and to encourage enthusiastically experimental machines which give promise of surpassing that standard. It seems a simple enough policy, but somehow it does not seem to be followed as closely as it might be.

Causes of Delay.

Somehow one cannot get away from the idea that the permanent incubus of the Services and "trade"

alike, the Royal Aircraft Factory, still has too much influence with the authorities. In the "Observer" of Sunday last, Mr. C. C. Turner—to whom aviation owes more than to any other writer in the lay Press—points out once more the failure of the R.A.F. to play as useful a part in Service aviation as it should have done, considering the means at its disposal.

Reference was made in this paper recently to the failings of the latest "standardised official designs." Mr. Turner, greatly daring, refers specifically to the R.E.5 and the B.E.2c. The former, which was intended to be a big weight-lifter with a fixed cylinder engine, is an abject failure. It is not fast for its power, it is a "pig" to fly, one cannot see out of it, and it needs half a county to land in. It does less in every way than the 80-h.p. Avro does, and it takes 50 per cent. more power to do it.

The B.E.2c. is inherently stable, and there all its virtues end. The pilot has not as good a view as in other B.E.s. It is slower than the old B.E.2. It does not climb as well. No one has clamoured more for inherent stability than I have, and I still believe in the need for it, but in war time most aviators would rather have a good horse which was liable to an occasional stumble than even the most surefooted of donkeys, and that is what the B.E.2c. represents.

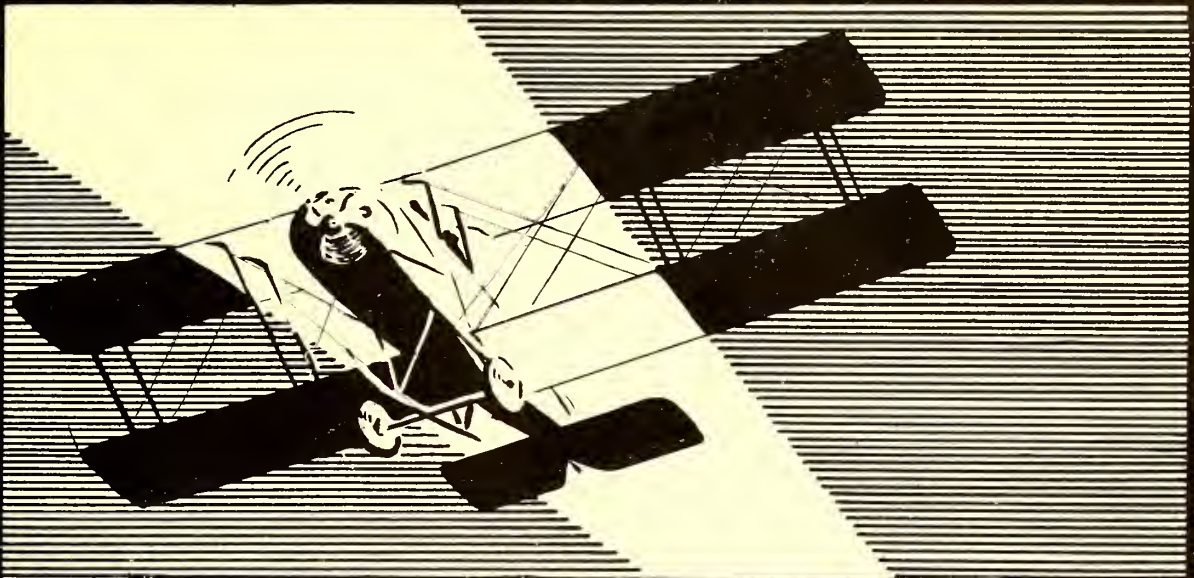
Also, this machine is so full of silly little finicky bits and pieces, all of which are absolutely unnecessary, and many of which are altogether wrongly applied, that it takes longer and costs more to build than any other machine of its size in the world. The excuse for some of these things is that they eliminate the use of acetylene welding—which shows that at last some sense has been drummed into the heads of the R.A.F. officials—but as a matter of fact some of their wonderfully original fittings are merely a source of increased danger, and all of them could be simplified and cheapened by any practical engineer who had not been filled up at a suburban polytechnic with the idea that to be scientific a job must necessarily be complicated.

Even the drawings turned out by the R.A.F. are so badly done that if the parts of the B.E.2c. were made as drawn the machine could not be induced to go together, and—as in former cases—the continual alterations of drawings cause delay after delay in the production of the machines.

A Black Record.

The record of the R.A.F. is not encouraging. They tried to build a "canard," and it killed Mr. Theodore Ridge. They tried to build B.E.s in ways not intended by the original designer and they killed Captain Downer, and Captain Allen, and Mr. Burroughs. They tried to beat the Sopwith scout with the S.E.1 and very nearly killed Mr. de Havilland. They tried to beat the 80-h.p. Avro with the B.E.8, and, so far as evidence can be got at the moment, it appears that the deaths of Mr. Copland Perry and the air-mechanic who was with him, and the death of the air-mechanic who was passenger with Mr. Smith-Barry—who was himself severely injured—are attributable to the bad flying qualities of this type. They tried to make a gun-carrier and the resultant F.E.2 killed Mr. Haiues and maimed Mr. Kemp for life—and by some strange means they seem to have burked the Royal Aero Club enquiry into the cause of the accident, for the most important witnesses as to the machine's unfitness to fly were not called.

They tried to build an engine, which was cribbed from other people's designs, and spoilt those designs in doing so. The engine has been a failure from the start. It was unable to stand up to the tests which the engines in the Naval and Military Aero-engine Competition withstood. Much money was wasted in ordering utterly impossible parts to be made for it. Finally it was made to run somehow. And, if the evidence at the inquest was not mis-reported in the Press last week, it was one of these engines which



The personal ascendancy of our airmen (vide General French's report) is only made possible by the superiority of our machines.

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caused the fire which burnt Mr. Busk to death in the air.

Yet these people are still allowed to have a say in what is fit and what is not fit for the R.F.C. to use, and even the R.N.A.S., which has hitherto been so independent in its choice of machines, wastes valuable time by considering B.E.2c.s.

Fortunately we have plenty of superior machines which are being turned out by various firms to keep both Services well supplied, but we can always do with more. Therefore I submit to those in authority that it is mistaken kindness to order B.E.2c.s.

It is, perhaps, kind to the less clever pilots to provide them with inherently stable aeroplanes, but it is no kindness to them if those machines when delivered are so slow and climb so badly that they are at the mercy of any of the new German machines. The B.E.2c. may be quite efficient for its 70 h.p., but it is still sheer foolishness to put it up against a German machine of 100 h.p., if the extra 30 h.p. is going to make that German climb 50 feet a minute quicker or fly 5 miles an hour faster, and, if I am not much mistaken, the difference is more than twice those figures.

There are plenty of more powerful engines than the 70-h.p. Renault to be bought here and in France, and one has only to look at the work done by the Curtiss engine to realise that we have an untapped source of supply in America also. Therefore it is pure waste of time and money to build B.E.2c.s now, with the in-

tention of using them in this war. They are not only useless, but they are a danger to those officers who have done such splendid work in the past three months. It is almost as bad as turning out brave troops armed with Martinis against an enemy armed with magazine rifles and machine guns, and that would be sheer murder.

I write strongly because I feel strongly on this point. The best aeroplanes in the world are not good enough for the R.F.C. and the R.N.A.S. Anything less than the best is altogether unfit for them and for the work they have to do. On various occasions I have attacked the work of the Royal Aircraft Factory—using the arguments of others better educated in aeroplane design and construction than I am—and never yet have I been proved wrong on any essential point. I am not wrong now. The evidence before me is too strong to be refuted.

We have had enough of mistaken kindness to unworthy objects. Let us have more consideration for those who deserve it. If the R.A.F. cannot produce a satisfactory machine of their own, let the vast resources and the immense staff of workmen in that establishment be turned on to make really good machines to the designs of the Avro, or Short, or Sopwith, or Vickers, or other firms whose machines have proved their worth, and let the whole thing be put under the control of the Aeronautical Inspection Department.—C. G. G.

The late Mr. E. T. Busk.

His Majesty the King has sent the following letter to Mrs. Busk:—

Buckingham Palace, Nov. 11th, 1914.

“Dear Mrs. Busk,—The King has heard with much concern of the tragic death of your son, Mr. Busk. His Majesty well remembers meeting him at the Royal Aircraft Factory on the occasion of their Majesties' visit to Aldershot last summer, and was much struck by his ability and technical knowledge of the machinery of aeroplanes. The King also saw him give an exhibition of flying in a stable aeroplane of his own invention. In offering you his sincere sympathy in your bereavement, the King feels that the country has lost the services of one who, by experiment and research, contributed in no small measure to the science of flying.—Yours very truly,

“CLIVE WIGRAM.”

Mrs. Busk has been much touched by the numerous letters of sympathy which she has received. She is unable to answer these at present, and hopes that the writers will forgive her for expressing her gratitude through the Press.

This Cold Weather.

Has it struck anyone how suddenly the weather has changed during the past week? The weather we have had during the past few days is merely a taste of the cold our troops are feeling on the Continent, and it is going to be worse before long. Anyone who has tried to work on a cold motor lately may obtain some faint idea of the daily, and all-day, task of our air-mechanics on active service. Is it possible, therefore, for any reader to resist the appeal for further contributions to the “Comforts Funds” for the R.N.A.S. and R.F.C.?

Both funds are growing steadily, but much more is needed. The warm clothing wears out quickly on active service, and the smokable and eatable comforts disappear still more quickly.

As regards the R.N.A.S. Comforts, thanks are particularly due to Lady French, the Honourable Mrs. Morgan, Mrs. Hetherington, Mrs. Warneford, and Mrs. Masterman, who have all sent big supplies of woollen comforts during the past week. Nine cases have so far been despatched to the R.N.A.S. by Mrs. Sueter.

The cash subscriptions during the past week are as follows:—Mrs. Everitt, £2; Mr. Lipscomb, £1 1s.; Mr. Gnosspelius, £1 1s.; Mr. Butler, £1; Lieut. Ashton, R.E. (T.), £1; Mr. L. Vigers, 10s.; Mann and Grimmer (employees), 10s.; Mrs. Gregg, 5s.; Mr. Seddon, 2s. 6d.; total, £7 9s. 6d.—making a total to date of £114 18s. 4d.

The list lacks the names of many prominent firms and individuals connected with aviation, and one hopes the lead given by the directors and employees of the Sopwith Co., with their donation of over £25, will soon be followed.

Contributions should be sent to Mrs. Sueter, The Howe, Watlington, Oxon.

The R.F.C. Fund is also doing well, as the following extracts from a letter written to his wife by an air-mechanic, R.F.C., shows:—

He says: “Everything is all bog, you understand, and it is rather rotten weather out here just now. Still, you need not worry about me, dear, as I am getting ever so many nice things from England. Lord and Lady Rothschild have sent all of us a lovely parcel containing chocolate, cocoa, milk and cigarettes; and we had another parcel containing a shirt, a woollen cap, a body belt, a handkerchief, a pair of socks and several other things. I have also got a nice knitted jersey, so that I am nice and warm, so don't trouble to send me anything yet. The boys are all around me singing all the latest ragtimes, so you can guess it is pretty lively.”

Nevertheless, the fact that our men have plenty to eat and wear at present, and are keeping quite happy, is no reason for stopping contributions. Further supplies should be sent at once to Lady Henderson, 8, Chesterfield Gardens, S.W.

In Honour of the late Richard Gates.

On the occasion of the christening of the infant son of the late Flight-Lieutenant Richard Gates, the directors, pilots, and staff of the Grahame-White Aviation Co., Ltd., presented him with a handsome christening bowl. The act indicates the honour in which our dead friend was held.

In acknowledging the presentation, Mrs. Gates wrote to the managing director of the firm as follows:—“Dear Mr. Grahame-White,—Will you please accept and convey to the directors, pilots, and staff of the Grahame-White Aviation Co., Ltd., my sincere appreciation of their great kindness in presenting my little son with the handsome christening bowl?”

“I am quite sure that, in the years to come, when he himself will be able to understand and appreciate the beautiful gift, he will be very proud to know, as I shall be to tell him, of the esteem and regard that existed between his dear father and the Grahame-White Aviation Co., Ltd. Again, with many thanks to you, and through you the directors, pilots, and staff of the Grahame-White Aviation Co., Ltd., for the gift,

“Very sincerely yours,

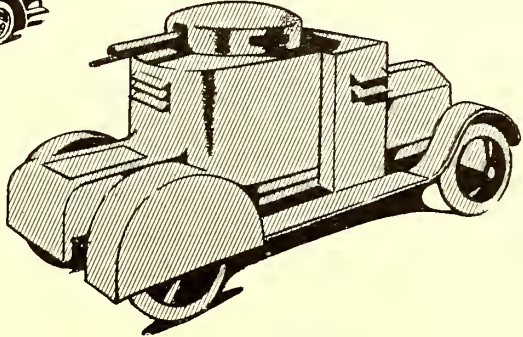
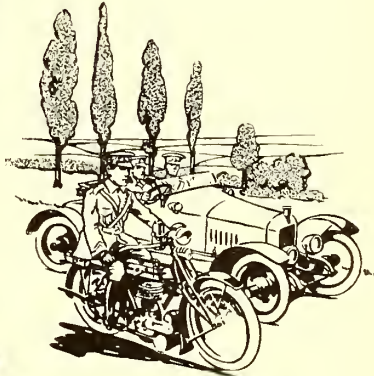
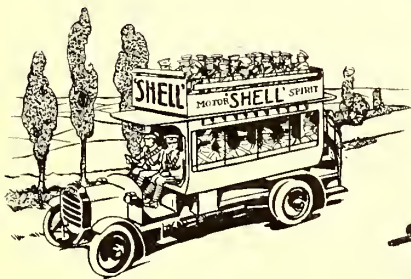
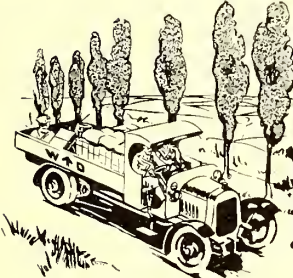
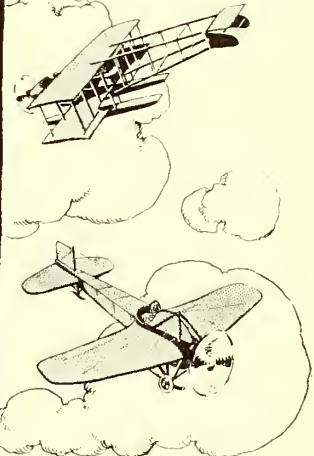
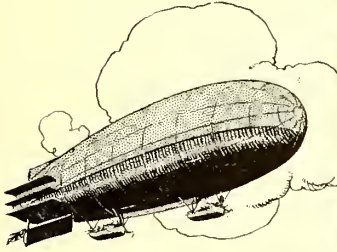
“(Signed) LOTTIE GATES.”



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GREAT BRITAIN.

From the "London Gazette."

A Second Supplement to the "Gazette" of November 10th, issued on November 11th, contains the following military appointment:

WAR OFFICE, November 11th.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—Capt. J. G. Weir, 3rd Highland (Heavy) Brigade Royal Field Artillery, Territorial Force, to be a flying officer. Dated October 28th, 1914.

A Third Supplement to the "Gazette" of November 10th, published on November 12th, contains the following military appointment:—

WAR OFFICE, November 12th.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—The undermentioned appointment is made: Lieut. W. A. S. Rough, 4th Battalion Bedfordshire Regiment, to be a flying officer. Dated October 30th, 1914.

From the "London Gazette," November 13th, 1914.

ADMIRALTY, November 12th.

ROYAL NAVAL AIR SERVICE.—Captain Oliver Schwann to be wing captain.

Acting Commander Frederick Lewis Maitland Boothby to be wing commander. Dated November 9th, 1914.

A Second Supplement to the "Gazette" of November 13th, published on November 14th, contains the following military appointments:—

WAR OFFICE, November 14th.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—The undermentioned flying officers to be flight commanders. Dated November 2nd, 1914: Captain Alexander Ross-Hume, the Cameronians (Scottish Rifles); Lieutenant Amyas E. Borton, the Black Watch (Royal Highlanders), and to be temporary captain; and Lieutenant Archibald Christie, Royal Artillery, and to be temporary Captain.

NAVAL.

The following appointments were made at the Admiralty on November 11th:—

Acting Captain W. L. Elder, to the "President," additional, for duty as inspecting captain of aircraft building, to date November 10th.

ROYAL NAVAL AIR SERVICE.—Mr. J. C. P. Wood, entered as probationary flight sub-lieutenant and appointed to the "Pembroke III," for Hendon Air Station, to date November 10th.

The following appointments were made at the Admiralty on November 12th, 1914:—

ROYAL NAVAL AIR SERVICE.—The undermentioned have been entered as probationary flight sub-lieutenants and appointed to the "Pembroke III," additional, for Royal Naval Air Service, with seniority as mentioned: P. N. Barnes and B. Travers, November 9th; A. C. Teesdale and F. M. Ballard (for temporary service), November 10th.

The following appointments were notified at the Admiralty on November 13th:—

ROYAL NAVAL AIR SERVICE.—Capt. O. Schwann graded as wing captain, to date November 9th.

Acting Commander F. L. M. Boothby graded as wing commander, to date November 9th.

The undermentioned gentlemen have been entered as probationary flight sub-lieutenants for temporary service and appointed to the "Pembroke III," for Royal Naval Air Service, to date as stated: W. H. Elliott, November 7th; R. Lord, November 10th; C. B. Dalison and C. Lowthwaite Startup, November 6th.

ROYAL NAVAL RESERVE.—Acting Lieutenant R. Hilton Jones, to the "Pembroke," additional, for Eastchurch Naval Air Station, as acting flight lieutenant, on probation, to date November 12th.

The following appointments were notified at the Admiralty on November 14th:—

ROYAL NAVAL AIR SERVICE: E. F. Moyes, entered as Probationary flight sub-lieutenant and appointed to the "Pembroke III," additional for R.N. Air Service, to date November

12th; L. Benyon, entered as probationary flight sub-lieutenant, for temporary service and appointed to the "Pembroke III," for R.N. Air Service, to date November 12th.

ROYAL NAVAL VOLUNTEER RESERVE.—Lieutenant A. Mackilligan to the "Pembroke," additional, for G. duties with aircraft, to date November 10th.

* * *

In connection with the sinking of H.M.S. "Hermes," the following announcement is made by the Admiralty:—

Previously reported missing, but not on board when the ship was sunk.—Turner, John, C.P.O. Mechanic.

* * *

The Secretary of the Admiralty announced on Wednesday, November 11th, that Flight Lieutenant Charles Francis Beevor, R.N., with Sub-Lieutenant the Earl of Annesley, R.N.V.R., as a passenger, left Eastchurch to fly abroad at a quarter past three o'clock on the previous Thursday (November 5th). The machine never reached her destination. Careful search has been made with aeroplane, seaplane, and patrol ships, but no tidings of the missing aviators have yet been received.

[Even now one need not give up all hope, as the machine may have landed in territory occupied by German troops, or the aviators may have been picked up and taken to a port occupied by Germans.—Ed.]

* * *

Vacancies exist in the Royal Naval Air Service for men of the age of eighteen and upwards to be trained in the handling, care, and maintenance of aircraft and motor transport, and general work in connection with the Naval Air Service. Preference will be given to men who have had experience in petrol engine work and carpentry, but this is not an essential qualification in the case of promising youths.

Pay will commence at 14s. to 28s. per week, according to qualifications, with first outfit and "all found," including separation allowance to married men. Men will be eligible for advancement to higher rates of pay, according to qualifications and vacancies, after a short probationary period. Enlistment may be for either continuous service—that is, four years in the Royal Naval Air Service and four years in the reserve—or for the period of war only.

Application in the first instance should be addressed in writing to the Naval Recruiting Officer, London Aerodrome, Hendon, N.W.

* * *

It is reported in the American papers that the Wanamaker-Curtiss "Transatlantic" flying boat was sent to England some weeks ago for test by the Royal Naval Air Service, and that satisfactory trials have been made.

Should such trials prove the airworthiness of the craft, the type seems to be one well worth perpetuating in the Service. Those who have flown in the original machine say that she is particularly comfortable, and that conversation between pilot and passengers in the enclosed cabin is quite easy.

For sea work in the winter such a craft offers very distinct advantages. Her size would make her safer if let down by engine failure in a rough sea, and the double engine arrangement halves the danger of being so let down, for such a machine should be able to keep flying with only one engine.

The two original O-X Curtiss engines, giving only 85-h.p. or so apiece, are obviously too small, but the machine should be quite capable of taking a couple of 150-h.p. Sunbeams in place of them, pending the arrival of the later 160-h.p. Curtiss engines.

* * *

The Paris edition of the "New York Herald" of November 12th is responsible for the following, which is too funny to be allowed to rest in its columns:—

"Two bright-looking young men, wearing the blue uniform of the Royal Navy and the putties of a chauffeur, arrived early yesterday morning from Rouen at the Hotel Wagram. They proved to be Commander Philip A. Shepherd, R.N., and Flight Lieutenant Sydney V. Sippe, of the Royal Naval Air Corps, and when their connection with this famous branch of naval

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activities was known they were much sought after by all interested in navigation of the air who are now in Paris.

"During last evening they formed the centre of an interesting group at the hotel and only had words of praise for the French airmen, with whom they have so frequently co-operated.

"Mr. Sippe recently won favourable mention for the important part he played in the raid on the Zeppelin headquarters at Düsseldorf."

After quoting without acknowledgment the week-old description of the raid given by the Lübeck correspondent of the "Times," the "Herald" man says "Lieutenant Sippe made good his escape, having scored heavily." Apart from the fact that the elder of the two bright-looking young men is not a Commander, and was paying his first war visit to France, and that the younger had "co-operated" with Belgian and not with French aviators, and is always most anxious to disclaim any participation in the Düsseldorf raid, and that there is no such thing as the Royal Naval Air Corps, the Franco-Anglo-American journalist is, in the main, correct.

* * *

Fate occasionally plays low tricks of a peculiarly petty kind on aviators. One of the worst of these came to the writer's notice lately. A certain seaplane pilot and his passenger were brought down far away from shore by engine failure, and sat for hours on their floats in a heavy rolling sea till by very good fortune they were picked up, in spite of a particularly bad fog. Naturally they had no food with them, but they had a plentiful supply of cigarettes and material with which to light them. The irony of the situation was that they were both too seasick to be able to face tobacco smoke, and so lost their only consolation in their extreme peril. Those who have stood to leeward of a fat and comfortable person smoking a big cigar, on a cross-Channel boat, feeling doubtful as to the behaviour of their internal mechanism, will probably sympathise with these two unfortunates.

* * *

A midshipman on board one of the ships which have been bombarding the German troops in Belgium has written a description of his experiences, from which the following extract is taken:—"It was not all one-sided, for the Germans brought big siege guns and howitzers down to the beach and fired at us. We were fired at several times by torpedoes, but they always missed us. Last Wednesday we began bombarding as usual, when we were attacked by submarines and then aeroplanes. Nobody was hurt. We opened fire, and between us and a destroyer we sank one of the submarines. It has been like that nearly all the time, submarines and aeroplanes mainly attacking us. It was jolly fine sport."

* * *

Stoker Gill, of H.M.S. "Venerable," writing to his mother, describes the naval contribution to the action on the Belgian coast on October 27th. He states that an "airman" kept them informed of the result of their 12-inch gun practice. "When we let go we could only see a big flash, which is best described by the following message an airman dropped us: 'Blew enemy's battery sky-high.' That's the second battery we blew up to-day."

* * *

A flight-lieutenant in the Royal Naval Air Service writing home says:—

"The war seems to be going on fairly well for us, but I hear from very reliable sources that the casualty list is shocking. It is an awful carnage. We want every able-bodied young man we can get, otherwise God knows what will happen to England. And, what is more, the country requires them now; not to go abroad, but to train. A half-trained officer is worthless, a half-trained Tommy little better, and it takes quite a year to make even a moderate officer. I hope Mr. Asquith will tell the country straight out what is required, and what has been done, and make them realise how serious this war really is. England is still asleep, and refuses to give Sir John French and Admiral Jellicoe the assistance they so earnestly need."

[It is worth while to contrast this letter, from presumably an elder man, with the joyous epistle of the midshipman above.—Ed.]

MILITARY.

The account of the official Eye-witness with General Headquarters, issued on November 11th, contains the following passage relating to aircraft:—"During the afternoon (Nov. 1st) a German aeroplane was captured quite uninjured."

* * *

The following passage in the narrative by an "Eye-witness" at General Headquarters, published on November 17th, and dealing with events of November 5th, refers to aircraft:—

"Along the rest of our line nothing of special interest occurred. Farther south our aeroplanes and those of the French scored a success by partially destroying two of the old forts of Lille. Fort Englos was blown up on the 4th and Fort Carnot on the 5th. They were most probably used as magazines, and may have been of some tactical importance as 'points d'appui' in the line of entrenchments."

* * *

The following is from a letter of a British Staff Officer:—

"I took a despatch to-day to —, and on my way there met a very old friend of the Flying Corps. Afterwards I went to the aerodrome. I have never, in a fairly wide experience of keen and gallant soldiers, met such a splendid lot of men as the R.F.C. They are one and all desperately enthusiastic. I could only stay a very short time, but I was taken round and shown all the newest ideas. . . I climbed into one of the aeroplanes to see what it was like, and was strapped in, whereupon I could fancy what a battle in the air with a 'Taube' would be like. The R.F.C. cannot get any of the latter to meet them now; they turn at once and fly away. 'Taubes,' our men said, 'are getting very rare,' and they were really quite despondent about it. While there I met several of our airmen who had just come back from over the German lines with their reports. It was most fascinating talking to them of their experiences."

[It may be well to point out that this letter must have been written some time ago, probably before the bigger and more powerful German biplanes came into general use. The reference to "Taubes" may refer to the genuine "dove" type of monoplane, or to German aeroplanes in general, including the newer biplanes.—Ed.]

* * *

The following extracts are from a letter written home by a young officer of the R.F.C.:—

"The weather has taken a decided turn for the better. At one time I used to find my wind-screen completely obscured by hoar frost, and every morning I had to count my toes to make sure I got them all into my boots. I was unfortunate in choosing (?) my first time under fire. I had to go in my car with a message from one point to another, and the route lay along a valley in the zone of fire, i.e., our guns were in the valley and were firing over a river and a range of hills, while the enemy were firing from the opposite direction. As I stood talking to an officer a shell passed over my head and burst about fifty yards behind me. The officer's horse evidently came to the conclusion that he would offer much less surface if he lay down, and still less if he could get the car between himself and the offending missiles. Accordingly he rolled over, and in doing so landed on my front mud-guard, while his rider was thrown on to my steering wheel after the fashion of rubbish being ejected from a tip-up cart. It appeared afterwards that the enemy had been plugging away for some time at a waste piece of land under the delusion that they were exterminating thousands of French's contemptible little army. By the way, I had to run the gauntlet of this cross fire again on my way back."

In a second letter, dated November 4th, the same writer says:—

"I have just returned to 'base camp,' after an exciting week with the artillery and the Indian troops at the front. Where we were the town was smashed about pretty badly, some of the houses being absolutely demolished. Our aeroplanes are doing good work in a quiet steady way, especially in range-finding for our heavy field guns. Their records are not perhaps so spectacular as those of the Naval Wing, with their raids on German airship sheds, but are quite as useful,

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and, I think I may say, equally risky. Let me instance a case that happened last week. One of our machines which was out reconnoitring was brought down by our own guns by mistake owing to the bad weather making it difficult to recognise its nationality. It was only through exceptionally skillful piloting that no lives were lost. As it was, the engine was smashed, and when the machine had been beautifully 'planed' down to a hastily chosen landing ground it suddenly collapsed and hit the earth like a stone dropped from a window of a house. The machine was hit when a hundred feet from the ground. It speaks well for our gunners, even if they did choose the wrong target.

"You have doubtless read in the papers of the German bomb-dropping raids on Compiègne and St. Omer. I was present on both occasions. In the first case one of the bombs missed my car by about twenty yards while I was enjoying tea. The battle of the Aisne also afforded many interesting incidents, which I have not time to relate. Active service is very exacting, and now that daylight is getting shorter more work has to be crammed into it."

* * *

An infantry officer writing on November 6th indicates that the R.F.C. is as busy as ever. He says:—"When it is fine, aeroplanes buzz across and soar over the enemy's lines, and drop lights out to show the artillery where the guns of the enemy are. The enemy's planes do the same; then their guns send shrapnel up in the air, and little puffs of smoke appear all along in the sky, and after a bit you hear the report. The shrapnel never gets near the planes, however."

* * *

An A.S.C. officer, on mechanical transport duty, writes:—"German aeroplanes come over occasionally, and are chased back by the British and French, but I have not seen any brought down."

* * *

An infantry officer writes:—"Two days ago a German aeroplane dropped bombs all around and tried to get the hospital. They are too despicable."

* * *

The "Morning Post's" correspondent in Northern France reports:—"Spies still give much trouble to the British troops in the field. A recent incident was that a German spy threw by hand from the roadside a bomb at a British aviation camp, just at roll-call time. Eight men were injured by the bomb."

* * *

The following extract from a letter written to his family by Private F. Burton, Bedford Regiment, will probably interest the R.F.C.:—"The art of war-airmanship has been brought very near to perfection during the past two months. One airman told me that the most difficult of all jobs was to drop bombs, because at 1,000 feet, and even 500, things on the ground look so different.

"There is a big thatched barn near us, about 50 ft. by 20 ft., with a flat lean-to roof, which he has the greatest difficulty in recognising, as it is the same colour as the ground, and he can only locate it by noting other objects near it.

"The airmen are getting more skilled every day. They practise dropping bombs made up of paper, grass, or anything that will make a ball about twice the size of a football, and heavy enough not to be affected by the wind, which affects a bomb more than it does a bullet at 1,000 yards.

"I gather that bomb-dropping at 1,000 feet is more difficult than getting bull's-eyes at 1,000 yards with a rifle under perfect conditions."

[Bomb-dropping from 1,000 feet seems a precarious performance for the aviator.—Ed.]

* * *

An artilleryman writing home to his mother, says:—"We had rather an unwelcome visitor over our battery yesterday; it was a German airman. They think they cannot do enough damage to us with their shells, so he came over, dropping bombs. But he was a rotten marksman. He meant to blow up one or two of our guns, but the bomb fell about 800 yards from our flank, and made a big hole."

FRANCE.

Apropos the photograph of a wrecked Zeppelin, which is published in this issue, a friend in France who sends it, together with the photograph of the Aviatik, says that both were taken near Epinal about August 20th last. The airship, it will be seen, is an authentic Zeppelin. The ship was flying very low, at a height estimated at about 2,500 feet, and had the misfortune to cross a road where one solitary field-gun, one of the famous "soixante-quinze" type, had been left behind "en panne," presumably with a damaged wheel, or something of that kind, and was awaiting repairs. The gun section took the chance that was offered to them, and fired on the Zeppelin, hence the abrupt descent. The machine came down in the forest of Badonvillers, near Epinal, all the crew escaping, but the Zeppelin was burnt next morning by the local peasants.

The friend who sends the picture says that the said peasants must be related to the heroes of a story told him early in the war after dinner at Maxime's in which the narrator said that the Germans were meeting with a stubborn resistance on the French frontier from "infuriated pheasants armed with fitch-porks."

The Aviatik was hit by shrapnel, which punctured the petrol-tank, and the machine landed perfectly some 20 kilometres from Epinal. The pilot and passenger escaped, and there was no petrol with which to burn the machine, which was found absolutely intact. The engine was fitted with two magnetos and two plugs to each cylinder, so that it had a complete dual ignition system, not merely a switch starter and a magneto. It was also fitted with a compressed-air starting-gear and with two separate carburettors, each carburettor feeding the six cylinders, so that in the event of a choked petrol-pipe to one carburettor the other could keep the machine going.

The photographs were lent to our friend by two sapeur-mécaniciens of the French army, to whom the editor of this paper desires to express his thanks, and regrets that Service regulations do not at the moment allow their names to be recorded for the benefit of a grateful public.

* * *

Correspondents in France send notes concerning several people whose names are familiar in aviation. One is to the effect that Louis Wagner, who will be remembered as the pilot of the Hanriot monoplane at Bournemouth, was recently seen very busy doing odd jobs under fire in the Soissons district. He had recently been paying a visit to his friend Ladougue of Escadrille 30, who will be remembered as flying the Goupy biplane at the second Doncaster meeting and at Burton-on-Trent. Another visitor to the escadrille was the Marquis de Polignac, who ran the first Reims meeting so successfully.

One hears also that one of the most useful pilots in France is the young Comte Lareinty de Tholozan, who is in a Blériot escadrille in the Nancy district. His cousin, the young Franco-Polish Prince Poniatowski, who is also closely associated with aviation, has been doing great work as a dispatch-driver in a car. Recently, he had just dropped two passengers when a shell fell behind him and killed both passengers and smashed the hood of the car.

* * *

The news that the sapeur-aviateur Noel has been made a caporal-aviator is very gratifying, and rumour has it that he is noted for sergeant, and confirmation is expected almost immediately.

It is reported that among the soldiers awarded the military medal for valour is the aviator Mezerguen Léo Pèrning, who has gone several times in succession to bombard positions strongly defended by the enemy's artillery. In one day he dropped 18 bombs and 5,500 little steel arrows. On another occasion he pursued a hostile machine into the enemy's lines.

* * *

It is reported that Lieut.-Aviateur Clamadieu, flying low to execute a reconnaissance below the clouds, was brought down by rifle fire. He pluckily tried to glide towards the French lines, but was only able to reach a point 50 yards from the German trenches, where he was shot dead.

A further report relating to the death of Lieut. Noel says that his neck-scarf was found wound round the butt of the propeller, and it therefore seems as if somehow it must have

cast loose and broken the propeller, which in turn broke the spars.

It is reported that Captains Reny and Faure were killed at Issy-les-Moulineaux, apparently on a Voisin, though the actual reason for the accident is not yet known.

* * *

It is announced that young men, called by conscription for the class of 1915, who belong to professions useful in military aeronautics (tuners and fitters of aviation motors, riggers, "balloon-tailors," and wood-workers) wishing to be incorporated in this arm (aviation and aerostation) are invited to address to the Directorate of Aeronautics at the Ministry of War a demand for appointment. It is noted that a number of those who have already sent in their demands have omitted their domiciliary and military addresses, and they are urged to repair this omission. Such carelessness does not bode well for the reliability of the applicant as a mechanic, and one would recommend the French authorities to "scrap" such applications. A man who would forget to put his address on a form would forget to put a lock-nut on an engine.

* * *

Mr. A. Beaumont, of the "Daily Telegraph," writing from France on Tuesday of last week, gives the following interesting account of the destruction of two German machines:—"The German aeroplanes—as many as are left of them, for they are diminishing every day—make it a steady practice to fly over towns some twenty miles beyond the fighting line and drop bombs to terrorise the non-combatants.—[Mr. Beaumont is evidently in error. The output of new German aeroplanes must exceed the wastage of war, judging by their rate of production before the war.—Ed.]—A few days ago one of these appeared over the village of Arques, near Saint-Omer. But the sentries of Arques had given warning, and the machine, which was a biplane, was fired upon and disabled. It descended in the marshy ground of the woods of Clairmarais.

"A detachment at once set out and soon discovered the aeroplane deeply embedded in the soft soil, but there was no sign of the aviators. The soldiers started a search in the woods, and finally discovered the aviators in hiding. They were challenged by three French soldiers, who kept their rifles aimed at

them, and seeing that there was no escape the two Germans threw up their hands. They were told to march along the road, and a soldier walked at the side of each, while the third followed behind. They had hardly gone fifty yards when the German aviators threw themselves on the two soldiers, intending to seize their rifles. One of the soldiers, named Burel, was thrown down, but he managed to prevent his assailant from seizing the rifle, which he flung out of reach. The two wrestled on the ground, and the German officer tried to use his revolver. But Burel seized his wrist, and held his hand and head fast to the ground. Meanwhile, the third soldier, who had been behind and had abstained from firing for fear of injuring his comrade, succeeded in aiming at the officer and firing a bullet through his brain.

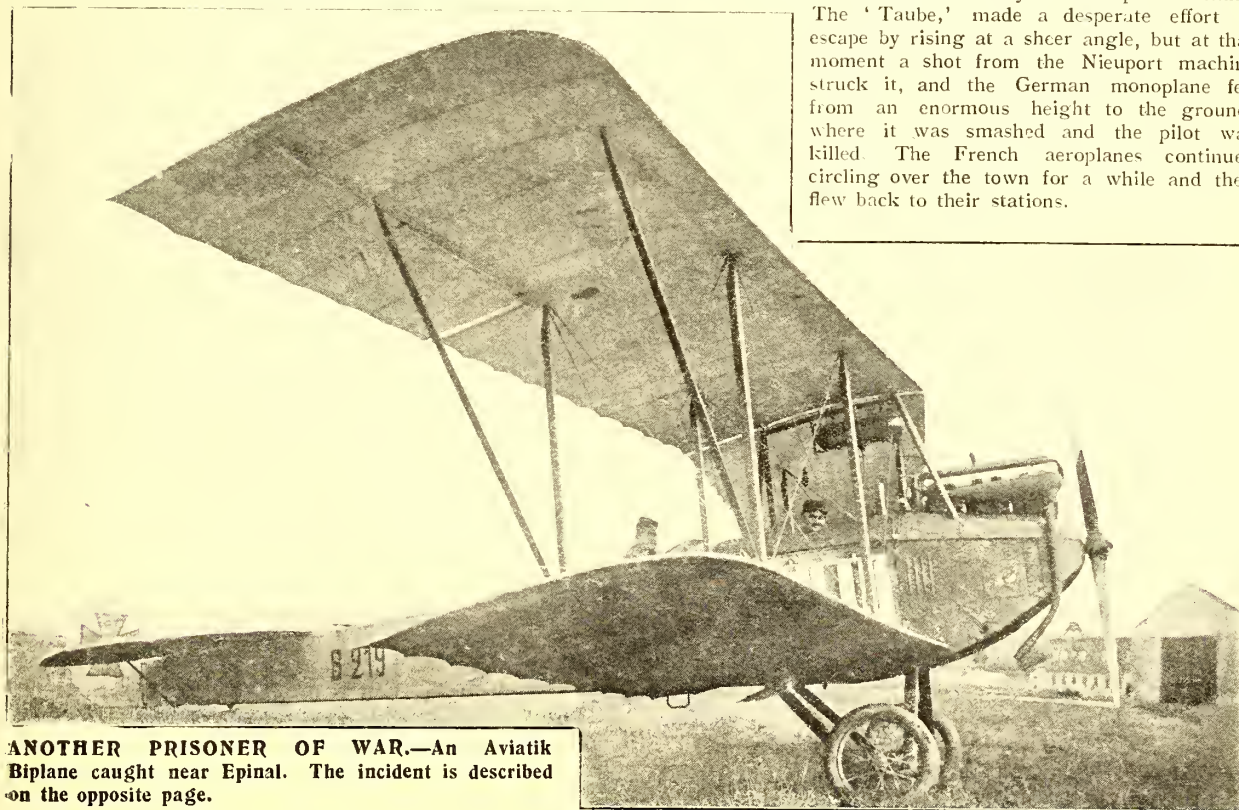
"During this time the other soldier, named Dubos, was struggling with the second prisoner, and was about to be stabbed by the latter, who had drawn a poinard, when his two comrades came to his rescue. They killed the German at the point of the bayonet, and to make sure that he was dead they fired a bullet through his head. Had they succeeded in their treacherous attempt the two German officers would no doubt have killed the three soldiers and attempted to escape."

[It may have been "treacherous," but it sounds rather like a sporting effort for liberty, and the French soldiers should have disarmed them first.—Ed.]

* * *

Another instance in which a German aeroplane was destroyed is related by a French journalist who had been at Arras. He was in the square at the front of the demolished Hotel de Ville when the noise of an aeroplane was heard. They looked up and saw a 'Taube.' Some children were playing in the streets near by, and their frightened mothers called them in. But an instant later a French biplane appeared in the sky, and as it was slower than the 'Taube,' the latter started in pursuit. But the biplane had acted only as a decoy. Before long a fast French monoplane of the Nieuport type darted upwards and followed the German machine, which was now caught between two enemies. The biplanes swerved round, and as it was better armed it headed for the 'Taube,' whose

retreat was cut off by the Nieuport machine. The 'Taube,' made a desperate effort to escape by rising at a sheer angle, but at that moment a shot from the Nieuport machine struck it, and the German monoplane fell from an enormous height to the ground, where it was smashed and the pilot was killed. The French aeroplanes continued circling over the town for a while and then flew back to their stations.



ANOTHER PRISONER OF WAR.—An Aviatik Biplane caught near Epinal. The incident is described on the opposite page.

The "Daily Chronicle" special correspondent in Paris reported on November 13th as follows:—

"Some French soldiers doing sentry duty on the Pont de Beauguillé at Amiens recently saw a 'Taube' aeroplane above them and fired upon it ineffectively. To their surprise, however, the aeroplane presently gracefully came down to the ground, and from it stepped forth Garros, the French aviator. He related that while chasing 'Taubes' a few days previously he had some trouble with his motor and descended, feigning a fall. 'A German pilot approached to take my papers, believing me dead,' said Garros, 'and when he was a few steps away I pulled out my revolver and put two bullets through him before he could say a word. Thus I secured this 'Taube,' which is very useful for flying over the German lines. I left my own aeroplane in the care of a neighbouring farmer.'

"One of the British soldiers now approaching convalescence in Paris is a member of the Royal Flying Corps, who, during a flight over the German lines, brought a 'Taube' down, but was rather badly punished. The surgeons took five bits of metal from his abdomen and a scrap of shrapnel from his left knee. Now that there is a prospect of his getting back to work he is quite cheerful."

[The first story is hardly convincing, for M. Garros would probably consider an action of this nature unsportsmanlike, and, anyhow, he would not be such a fool as to fly a "Taube" over the French lines with the certainty of being shot by someone who knew the difference between one type of machine and another. The second story is all wrong, except for the five bits of metal, and the fact that the patient is quite cheerful, so the other is probably equally distorted.—Ed.]

* * *

The "Intransigent" published on November 10th a description of some work in an airship. The vessel was ordered to go to certain country held by the enemy and to blow up a railway junction. It rose to about 5,000 feet and started for its destination. It managed to avoid the enemy's searchlights and discovered the point it was ordered to attack. It descended a little to be sure of its aim, and let go three bombs. Fire was opened upon it, and it promptly started to rise. Lying on the floor of the car, two officers watched the effects of their bombs. The captain, aided by a mechanic, had just placed a fourth bomb in position. Suddenly the mechanic exclaimed: "The bomb has stuck." It had wedged itself in the tube, and in a few seconds it would explode. The captain did not lose his presence of mind. He seized a hatchet and with four vigorous blows cut away the bomb-tube bodily. The bomb exploded a few hundred feet below the car, and the airship returned uninjured. [It strikes one that it would be a mighty slow time-fuse which would give one time to find an axe and cut loose a metal-held bomb-tube. And, anyhow, why use a time-fuse in a contact-bomb?—Ed.]

* * *

An American war correspondent, writing of the Kaiser's headquarters in France some time ago, says he wondered why the aviators of the Allies "were not on the job." A dozen backed up by an intelligent intelligence department could so obviously settle the fortunes of war by blowing out the brains of their enemy. Perhaps, he adds, that is why the whereabouts of Great Headquarters is guarded as a jealous secret. Soldiers at the front do not know where it is, nor do the people at home, and, of course, no mention of it is made in the German Press. Two aeroplane guns were mounted on the hills across the river opposite the Emperor's residence, and near them is a picked squad of sharpshooters on guard day and night. The secret police are unceasing in their hunt for spies.

* * *

The "Morning Post" correspondent in Northern France makes the following notes on aircraft in a report dated November 12th:—

"It was a distinct point in favour of the French that the weather during this battle had become misty, with fog hanging up aloft for a considerable part of the day. This prevented the use of aeroplanes, and the absence of this means of correcting the range kept the big German guns in their rear from taking their usual effective part in the fray. It was an excellent object-lesson of their dependence upon their aerial scouts for their efficiency.

"This recent fighting has demonstrated what a wonderful aid the aeroplane is in modern warfare. When it cannot be used the lack of it is instantly observable. When the British forces were being moved from the Aisne round to the north, for quite two days before they began to march our aviators were aloft chasing anything in sight, and all through the march they policed the air to perfection. It is pretty safe to say that, so far as aerial observations went, the Germans knew absolutely nothing of the line of khaki that was moving along the roads to the railhead."

GERMANY.

The "Vossische Zeitung" learns from Karlsruhe, states an Amsterdam telegram, that last Sunday and Monday two hostile airmen flew over the airship hangar at Rheinau and then passed over Schwetzingen, flying in the direction of Darmstadt. The airmen were fired on with shells, which exploded over the aeroplanes.

* * *

The "Exchange" Co.'s correspondent wired from the Hague on November 13th:—"According to a telegram from Berlin, the Kaiser, who has now established his headquarters at Coblenz, has commanded his five daughters-in-law and the sons of the Crown Prince to visit him there. Two Zeppelins, with machine guns, are engaged continually circling over the Kaiser's private apartments." [What a lovely chance for our aviators!—Ed.]

* * *

The mystery regarding the origin of the report, widely circulated in Germany, that German aviators had crossed the Channel and dropped bombs on Dover, is now revealed by the Berlin "Morgenpost." It appears that an enterprising German soldier, now on duty at Bapaume in Northern France, publishes a "field newspaper" for the edification of his comrades, and it was in this weighty organ that the Dover story first appeared, under date of October 18th.

* * *

In a recent number of the "Munchner Medizinische Wochenschrift," Dr. Volkmann comments on the effects of "flèches." One soldier hit on the head was killed on the spot; another was hit on the shoulder, the arrow passed right through his chest, and was only stopped by the interior face of his ribs, and he died two days later. Many soldiers have been nailed to the ground by the feet. Dr. Volkmann, and his colleague, Dr. Grünberg, affirm that the flèche is a very dangerous weapon, and the wounds it inflicts are nearly always fatal.

BELGIUM.

A narrow escape of the King and Queen of Belgium from a bomb was described to a representative of the Press Association on November 15th by a distinguished Belgian who recently arrived in this country. A few days ago, he said, while their Majesties were walking along the seashore near La Panne, King Albert observed a Taube flying over them, and warned the Queen that it was making for them. Within a few moments of his remark a bomb fell from the aeroplane forty yards away, happily without doing any injury

* * *

The special correspondent of the "Daily Mail," cabling from the North of France on the 14th, says that the 56th Battery of the Royal Field Artillery at — had three of its guns wiped out by German howitzers directed by a Taube.

From the correspondent of the "Times" at Dunkirk, dated November 13th:—"An officer who has examined the German guns which were left abandoned in the water near Ramskapelle tells me that they are 5-in. guns, apparently of Austrian make and designed to be used against aircraft. The water round about them is five or six feet deep in most places."

* * *

The special correspondent of the "Telegraph" reported from Rotterdam on Wednesday last that a few days ago the large airship shed which was erected to the north-east of Bruges for the accommodation of two Zeppelins was taken down by Germans, and the material was placed on tramcars and conveyed to a position on the south-west of the town, where, it is understood, the shed will be re-erected.

[The Press Bureau does not confirm the report that the Imperial Palace at Potsdam is being conveyed piecemeal to Leipzig by taxi-cab.—Ed.]

The special correspondent of the "Times" in Flanders reported on November 10th as follows:—"Near Ramscapelle was a Blériot monoplane lying stranded halfway across a dyke, with its landing wheels buckled up and its planes ripped by bullets and splinters of shell. This was the aeroplane in which Lieutenant Collett, of the Naval Flying Corps, was brought down over a fortnight ago while making a reconnaissance above the German lines. He had a lucky escape. His engine was hit by a German projectile, and he made a vol plané towards the Allied lines. As he came gliding down he had to run the gauntlet of bullets from both sides, the Belgians taking him for a German. Luckily, he managed to land behind their first line of trenches, where he was promptly made a prisoner. He was as promptly released when it was found who he was."

[It is highly improbable that Flight-Lieut. Collet, D.S.O., Royal Naval Air Service, who is presumably the officer indicated, was flying a Blériot monoplane at all.—Ed.]

* * *

The "Telegraaf," of Amsterdam, reported on November 12th activity of the Allies' aviators at Ostend. They are said to have dropped two bombs over the German troops there on Thursday of last week, and to have fired a store of benzine.

Bombs were dropped on Bruges on Tuesday by the Allies' aviators, and set fire to a number of benzine tanks. Neither story is officially confirmed.

* * *

Mr. Kenneth Kinnimont, the "Express" special correspondent in Northern France, reported on November 12th the following story told by one of the crew of a 4.7 Naval gun operating on an armoured train:—"While we were going up and down near Wipes (Ypres) the German airmen started dropping incendiary bombs—filled with petrol—into the place. Set fire to everything as soon as they fell they did; just burst into balls of fire. It was a good job they didn't all burst—only about thirty out of forty so far as we could count. Rotten as their shooting. We picked up one of them, and one of our chaps asked the lootenant if he should strip it—that is, open it—and see how it was made inside. The lootenant said, 'Not if you value your lives,' so we stuck it in a ditch. We brought down one aeroplane with our rifles at Wipes. I don't know if the airman was killed, but he ought to be by the rate he came down."

* * *

The "Morning Post" correspondent in the war area reports as follows:—"The war in the air is full of exciting incidents. . . . But few of them find their way to public record. To make the balance even, many strange fictions are published. The actual fact about a recent big concerted aeroplane movement may now be told. It was reported that the German Emperor with his Staff was at Thielt. A great fleet of aeroplanes at once went out to teach him to keep away. But the airmen were in doubt as to whether their quarry was at Thielt. They could find no traces of him. If the German Emperor was there he was not there with his Staff in full panoply, or an execution would have taken place without much doubt. But humanity forbids that we should destroy a town with bombs from the air on the mere suspicion that it shelters Attila II."

[One would have thought that the fact that the town contained German soldiers was sufficient reason for its destruction. Probably it was not destroyed because no Power possesses sufficient aeroplanes with which to "destroy" a town of any size.—Ed.]

* * *

It is reported that the sheds for Zeppelins which were erected near Knesselaere have been removed again, and the correspondent concludes that German activity in the district may mean that the position of the German right wing is not very favourable. Knesselaere is in East Flanders, north-west of Ghent. As pointed out in previous issues the "Zeppelin sheds" were probably aeroplane tents.

* * *

The special correspondent of the "Daily News" in Copenhagen, Mr. W. M. Duckworth, reports:—

"Berlin continues its Zeppelin scare campaign. The latest report is that 25 new Zeppelins will be ready on November 15th. Each airship is to be built in the record time of 500 hours."

The Amsterdam "Telegraaf" learned from Maastricht on November 15th, that a dirigible coming from Belgium flew over part of the south portion of Limburg on that day. It could be seen that the balloon was badly damaged either by storm or bombardment. It passed to the south of Maastricht, and was going in the direction of Germany, via Valkenberg, when it disappeared.

Another telegram from Sittard (Dutch Limburg) states that a dirigible was observed on the same day at noon coming from the south-east and flying in a northerly direction along the Dutch frontier.

[An obviously "badly damaged" airship would hardly be cruising willingly, so either the machine was out of control or else the quoted words are merely Reuter's attempts at corroborative detail.—Ed.]

Apparently the Germans are still well provided with aeroplanes. The correspondent of "Le Journal," writing from Furnes on November 11th, reports that the bombardment of Ypres commenced on November 1st by twenty "Taubes" flying over the town and dropping about eighty bombs.

RUSSIA.

The "Times" correspondent at Petrograd reported on November 13th that two German aviators, Lieut. Merew and Lieut. Polte, proceeded on Wednesday in an Albatros aeroplane to reconnoitre the line Konin, Kutno, and Plock, where they threw two bombs. West of Rypin they were compelled to descend and were surrounded by Russian Dragoons. Two companies of German troops in the neighbourhood tried to rescue them, but were repulsed. The aviators and their aeroplane, which was uninjured, were brought on Thursday to Plock.

AUSTRIA.

The Vienna "Neue Freie Presse" states that: "Now Britain is in terror. She is in terror not alone lest she be beaten in this war, but first and foremost because of the probability that the war will be carried to England's soil. So now the bourgeoisie of London sit tight in their little houses and villas in Camberwell and Finchley, in Streatham and Highbury, breathlessly awaiting bombs from Zeppelins." A member of our staff who lives at Highbury reports that the Canonbury Tower is positively wobbling with fear.

ITALY.

The new fast dirigible which has been under construction near Rome for nearly a year now is just on completion—at any rate, it will probably take the air before the year is out. It is known as "V," and is destined for the navy. Captain Verduzio is credited with its designing, in regard to which the salient point, according to some, is the complete disappearance of both keel and car. No doubt they are only hiding inside the envelope. Maybach motors—four of them—are to propel "V" through two 4-bladed air-screws.

We hear that the "Turkish" bombardment at Theodosia wrought much harm to the Russian hangars there. One hopes that, if the whole thing is not journalistic, the "hangars" may have been at most empty tents.

A man who has not dipped into the Science of Gasbags has been asking me regularly for some days whether anyone has thought of employing balloons, anchored to the higher buildings or sites of a town, and possibly armed with a swivelling gun pivoted to the bottom of the car, for the detection of hostile aerial visitors. He opines that the gun might operate in conjunction with the searchlight with which the vessel would, of course, be fitted. Such a sentinel-balloon might be easily lowered or elevated to meet atmospheric conditions. Several of them stationed round the outskirts of a city would have a big range, and, being connected directly up to the various military air stations, might be a cheap and useful precaution. Balloons specially constructed for such use might be rendered less vulnerable by a modification of their internal structure on dirigible lines, and a semi-rigid protected envelope might be possible, since trans-Continental or altitude records would not be essential.

T. S. HARVEY.

[Sentinel balloons (captive, of course) are largely used by the various belligerent Powers, but even in almost calm weather there is so much sway and movement that the cars would make very bad gun or searchlight platforms.—Ed.]

Our New Aerial Service.

The Press Bureau states that it has been decided to use carrier pigeons for certain purposes in connection with his Majesty's Service.

The public are therefore requested to refrain from shooting or otherwise interfering with carrier pigeons whilst on passage.

It is sincerely to be hoped that this latest addition to the King's Aeronautical Services will prove as efficient as those sections already at work. The official solicitude for the welfare of the British Taubes is to be highly commended, but the public are warned against treating our new Service aviators unduly well when not actually on service, or if encountered when landing en route. Petrol or other spirituous liquors should not be offered, the engines of our Tauben needing only home-grown fuel. In this connection one would point out to nervous citizens that the employment of home products in this way does not indicate any shortage of petroleum in this country.

"Scots Wha Ha'e——."

The following placard is stated to have been issued throughout Scotland:—"G.R. £100 REWARD. Numerous reports of the presence of hostile aircraft in Scotland have recently been received. If these reports are true it is probable that the hostile aircraft have been operating from a secret base in some unfrequented part of Scotland, where they are able to obtain supplies of oil, petrol, and other stores. The above reward will be paid by the military authorities to any person who gives information leading to the discovery of any place which is being used in this manner. Such a base would probably consist of a store of oil and petrol concealed in an unfrequented locality, possibly in charge of an armed caretaker. Information should be given to the nearest military or police office.—(Signed) J. S. EWART, Lieutenant-General, Commanding-in-Chief, Scottish Command."

[Evidently the military authorities are not proof against the "invasion" stories. The present writer has heard stories of at least a dozen "Taubes" having landed at or having been brought down at or having passed over places within a hundred miles of London, and they have all proved simple fabrications. And there have been nearly as many equally groundless stories of airships.—Ed.]

The Promised Aerial Invasion.

Mr. Touche asked the Home Secretary in the House of Commons on November 17th whether he had received a resolution, passed by the Islington Borough Council, on the subject of the darkening of London; if he had any information pointing to the effect of the darkening as a cause of street accidents; and, in view of the public inconvenience, the loss to shopkeepers, and the perils of the streets, could he say whether any early relaxation of the darkening order might be looked for, or was he informed that its indefinite continuance was desired by the military authorities?

Mr. McKenna: "I have received the Borough Council's representation. I am informed by the Commissioner of Police that the police returns show no increase in the number of traffic accidents occurring by night. The regulations are made on the advice of the Admiralty, who are responsible for the defence of London against aerial attack. They have already been relaxed so as to allow shops to remain brightly lighted till 6 p.m., and I shall be glad to relax them further as soon as the Admiralty advise me that this can safely be done."

That a German invasion of England by means of Zeppelins is impracticable is the conclusion drawn by General George P. Scriven, Chief Signal Officer of the United States Army, in an exhaustive report on aircraft to the Secretary of War.

General Scriven declares that he is not prepared to recommend the American Army to take up seriously the question of constructing dirigibles, as they are not worth their cost as offensive machines, while for reconnaissance or defence they are of far less value than aeroplanes. The General says:—

"Dirigibles are seemingly useless in defence against the aeroplane or gunfire, and their attack may be safely left to the care of fire from the ground and to the aeroplane. These Dreadnoughts of the air can be used for offence as well as defence only in such infrequent and exceptional conditions that their construction under present conditions must be pronounced

undesirable. It may later be shown that aerial offensive flight, especially in conjunction with sea operations, may prove important, but it is useless to prophesy, and I believe that the only safe conclusion at this time regarding the value of aerial offensive, is a verdict of 'Not proven.'"

The U.S. Army Competition.

The much talked of United States Military Aeroplane Competition has unfortunately proved a complete "wash-out." Of the seven manufacturers who announced their intention to compete, only four actually constructed machines for the trials. These were the Curtiss Aeroplane Company, the Glenn L. Martin Company, the Christofferson Aeroplane Company, and Maximillian Schmidt. The only firm to comply with the rules, as to the provision of specified data and delivery to date, was the Curtiss Company. Under these circumstances the Board decided to call off the competition, but one gathers that the Curtiss Company receive any contracts that are going. The Christofferson and Schmidt machines are to be tested by the authorities on a non-committal basis.

[The Anglo-Saxon descent of the American People is at last clearly established.—Ed.]

A Slight Misapprehension.

The following letter merits consideration:—

"Sir,—I have always read THE AEROPLANE with great interest and enjoyment, but was astounded on perusing the article 'Offensive and Defensive Aeroplanes' in the current issue to learn that 'Great Britain is losing the flower of her aristocracy, who are fighting for an ungrateful democracy, which is really not worth fighting for, and she will be weakened as a nation thereby.'"

"Surely this is not the time to express sentiments of this sort when each class is doing its utmost, and when the aristocracy and democracy of the nation have never been so united in a grand wave of patriotism. However, the gauntlet has been thrown.

"The aristocracy enter the Army as a profession because it is comparatively the easiest going, most acceptable mode of pretending to do something in the world. They enter it in the majority of cases not because it is their duty, but because they must have a little occupation—a something which to most of them is more acceptable than the Bar or the Church—and now, when war is upon us, of course there is no other honourable course open to them than to obey the call to arms.

"To call a democrat with a family who has volunteered for service a 'hero' is a very mild word. Consider the position of his family. Left to exist on a few paltry shillings a week (can it be called 'existence?'), and if he is killed his wife has to fight fearful odds to bring up his family respectably—nay, respectably is impossible. Surely to fight for a country the Government of which allows his loved ones to lead a living death, and he himself—should he escape with his life—if he be maimed and cannot work, to die in the workhouse—is the highest form of patriotism and heroism.

"The case of the noble aristocrat is far different. He leaves his loved ones—in the majority of cases—well provided for and in the lap of luxury, and should he be killed the pension for his dependents is not to be compared with that of the poor democrat. Further—should it be necessary—an aristocrat has generally relations in a position to contribute something towards the stranded ones' maintenance.

"The aristocracy fighting for an ungrateful democracy! It is the democracy fighting for an ungrateful aristocracy! The aristocracy has something to fight for—something to protect. Surely it is not a very heroic thing for the aristocrat to bear a hand in protecting the land, part of which he possesses.

"However, the times of—

'God bless the squire and his relations

'And keep us in our proper stations'—

are fast disappearing, and in the good time which is coming it will go hard with the blatant aristocrat who is rash enough to utter such disgusting sentiments as yours.

"Yours, etc., A MERE DEMOCRAT.

"(Signed) PHYLLIS BOULTON (Wolverhampton)."

[This is, of course, a typical sample of the point of view of the English democrat, and is therefore well worth placing on record. Miss (or Mrs.) Boulton may be surprised to learn that the average British officer works longer hours than any of his

men, and far longer than the average factory hand or office clerk. His work is not only concerned with drill and route marching, but necessitates, after he has done a full day's work, the continual study of highly scientific subjects, until he has reached perhaps the age of 45, after which, if he remains in the Service, he probably adds from his own experience to the mass of science which his successors have to study, though his own work is in no way decreased thereby. He pays heavily in hard cash for the privilege of doing all this work, and if he makes a really bad mistake his career is ruined. He cannot start afresh, as a man in business could do. In the truest sense of the word, the British officer is the servant of his country—he is absolutely its slave—and to be so is generally the proudest tradition of his family.

In return he asks nothing but that he shall know he is doing his duty, and that his men shall love him sufficiently to follow him—not, mark you, to go where he tells them—when the time comes. He is now being put to the proof, and his answer is to be read daily in the Casualty List.

His men are, in the main, as good in their own way as he, and, though they may have less of the good things of the world to leave behind if they die, their lives are just as dear to them. They also belong to the military aristocracy. The majority of them are descendants of faithful retainers of the old fighting clans.

Precious few specimens of the "democrat with a family" have volunteered for service. Most of the men who have left families behind are Reservists who are called out to fight in accordance with a previous voluntary engagement, and have to leave their families to shift for themselves, while young able-bodied loafers stay at home and watch professional football matches. Under a proper system of national service—such as that to which the late Lord Roberts devoted the last years of his life—these old Reservists would be doing defence duty in safety and comfort at home and the able-bodied youngsters would be doing the fighting.

The families of Reservists have democracy to thank for their plight—democracy and the meanness of predatory plutocracy. Aristocracy, which is, as a rule, comparatively poor, spends its little spare cash in helping those who have fallen on hard times, and also sends the flower of its youth—many of them not in the commissioned ranks—to fight for well-paid, well-housed democracy, who watches the war in a cinematograph show.—C. G. G.]

"Aircraft in the German War."

Knowing that any attempt to write hustled history of the present war must be both incomplete and erroneous owing to lack of data, Mr. H. Massac Buist, in "Aircraft in the German War," disarms criticism by saying: "These pages make no claim to completeness." Accepting this, one can say unreservedly that it is excellent value for the money, the price being only one shilling. Those who have so far only taken a casual interest in aircraft will find much in the book to instruct and interest them, and those intimately connected with aircraft will not be unduly irritated by errors and omissions.

Mr. Buist, who is well known as a writer on motoring of all sorts, is a firm believer in aircraft, and consequently the deeds of the Royal Flying Corps and of the Royal Naval Air Service lose nothing at his hands. Incidentally, one would like to point out to Mr. Buist that the Air Service is not the "Third Arm." One has always understood that the three arms were horse, foot, and guns, and, sappers being generally included as the fourth arm, it is more correct to call the Air Service the "fifth arm."

The author describes quite clearly, for the benefit of the uninitiated, the difference between airships and aeroplanes, and describes in simple language their methods of control. The work of air scouts is lucidly described. Mr. Buist himself has done some flying as a passenger and appreciates most of the points of an air scout's work. Therefore, his descriptions are quite readable.

Naturally, he rates airships too highly when he says, "The capture or destruction of an airship of the Zeppelin class is as important a success to score as the destruction of a submarine"; for, in fact, neither Zeppelins nor other German airships have done anything of value in the course of the war so far, whereas the work of submarines has been as great a

feature of the naval war as has the work of aeroplanes in the land war. The only time a Zeppelin did any real damage was the solitary effective visit of one of these vessels to Antwerp. Probably when the book was written it was not as clearly understood as it is now that the average Belgian calls anything in the air a Zeppelin, with the result that many exploits which should be credited to German aeroplanes have been ascribed to Zeppelins.

The author devotes part of the book to the British Air Service and gives quite a useful history of the early days of the Balloon Section, R.E., which later became the Army Air Battalion, and is now the Royal Flying Corps.

In writing of the equipment of our Allies, Mr. Buist under-rates the Russian air service when he represents it as being only as large as our own. Also, he not only under-rates the capacity of the German aircraft firms in stating that France can produce at least one aeroplane for each one that Germany makes, but under-rates the effective strength of the German air service at the beginning of the war.

Taking it all round, however, the book is really of considerable value for future reference and it is well illustrated.

A Good Idea.

Miss A. F. Taylor, writing from 26, Bold Street, Southport, says:—"Sir,—As this town is now invaded by some—[number deleted by our tame Censor] men of the New Army, it seems to be a very favourable opportunity of enlightening the North Countryman on the subject of aviation, of which he is woefully ignorant at present.

"I am distributing copies weekly myself, but cannot supply a very adequate number of copies of THE AEROPLANE to so many thousands of men; but may I appeal to you to put a request in your next issue to those who may usually discard their copy weekly?

"Every reader probably does not file his copy, and I would ask that the small sum of one halfpenny for postage per week be spent in sending that unneeded copy here. It is not much to sacrifice in spreading news of our aviators to those who, in these times, heartily appreciate all the literature they can get.

"There are several institutes for the men, and they are packed nightly by the more serious-minded, and they heartily appreciate the newspapers there. The suggestion might be carried out in other towns where soldiers are billeted if an enthusiast took it up in this way.

"Any copies sent to me on Friday night, after being read, will be distributed by Saturday evening, so that the news will be received the same week as printed."

[It is hoped that a goodly number of readers, at any rate in the North of England, will help Miss Taylor to fulfil her wish to enlighten our new troops.—Ed.]

Another Farnborough Accident.

One regrets to hear that Mr. F. W. Goodden, who has been for some time employed as "test" pilot by the Royal Aircraft Factory, had a very serious accident lately.

The fact was kept very quiet, and it was only on Friday last that a friend of Mr. Goodden's heard of the accident—on being informed that the doctors now considered him out of danger. An inquiry as to how the accident took place merely elicited the information that it happened on "another of the Factory's freaks."

Mr. Goodden is one of the most cool-headed, cleverest, and safest pilots in this or any other country, and it is not at all likely that the accident happened through any fault of his own. All will wish him an early and complete recovery.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Windy	Fair	Windy	Windy	Windy	Windy	Wind Rain
East Coast ...	Windy	Wind	Wind Rain	Wind Rain	Windy	Windy	Wind Rain

Hendon.—AT THE GRAHAME-WHITE SCHOOL: Instructors: Messrs. Manton, Russell, Shepherd, and Winter. Pupils under instructor: Prob. Flt. Sub-Lieuts. Barnes, Bray, Cooper, Driscoll, Field, Hodsoll, Livock, Price, Wakeley, Watson, Young and Breese, and Mr. Greenwood. Straights alone: Prob. Flt. Sub. Lieuts. Ffield and Bray. 8's and circs. alone:

Prob. Flt. Sub-Lieut. Ffield, and Messrs. Easter and Carabjal. Mr. Easter took certificate in good style. Machines: Grahame-White biplanes.

AT THE BRITISH CAUDRON SCHOOL.—Instructors: Messrs. R. Desoutter and R. M. Murray. Pupils doing strts. or rolls alone: Messrs. Barfield, Stevens and Williams. 8's and circs.: Mr. Ivermee. Mr. Ivermee took his certificate in excellent style, reaching a height of 600 ft. Machines: Two Caudron biplanes.

AT THE LONDON AND PROVINCIAL AVIATION Co.'s SCHOOL.—Instructors: Messrs. W. T. Warren and M. G. Smiles. Pupils straights or rolling: Messrs. Abel, Moore, England-Derwin and White. Machines: L. and P. tractor biplanes.

Shoreham.—AT PASHLEY BROS. AND HALE SCHOOL: Instructors: Messrs. F. Hale and C. Pashley. Pupils with instructor: Messrs J. Morrison and J. Sibley. 8's and circs alone: Messrs. Menelas Babiotis, T. Cole, C. Winchester and J. Woodhouse. Machines: Pashley and H. Farman propeller biplanes.

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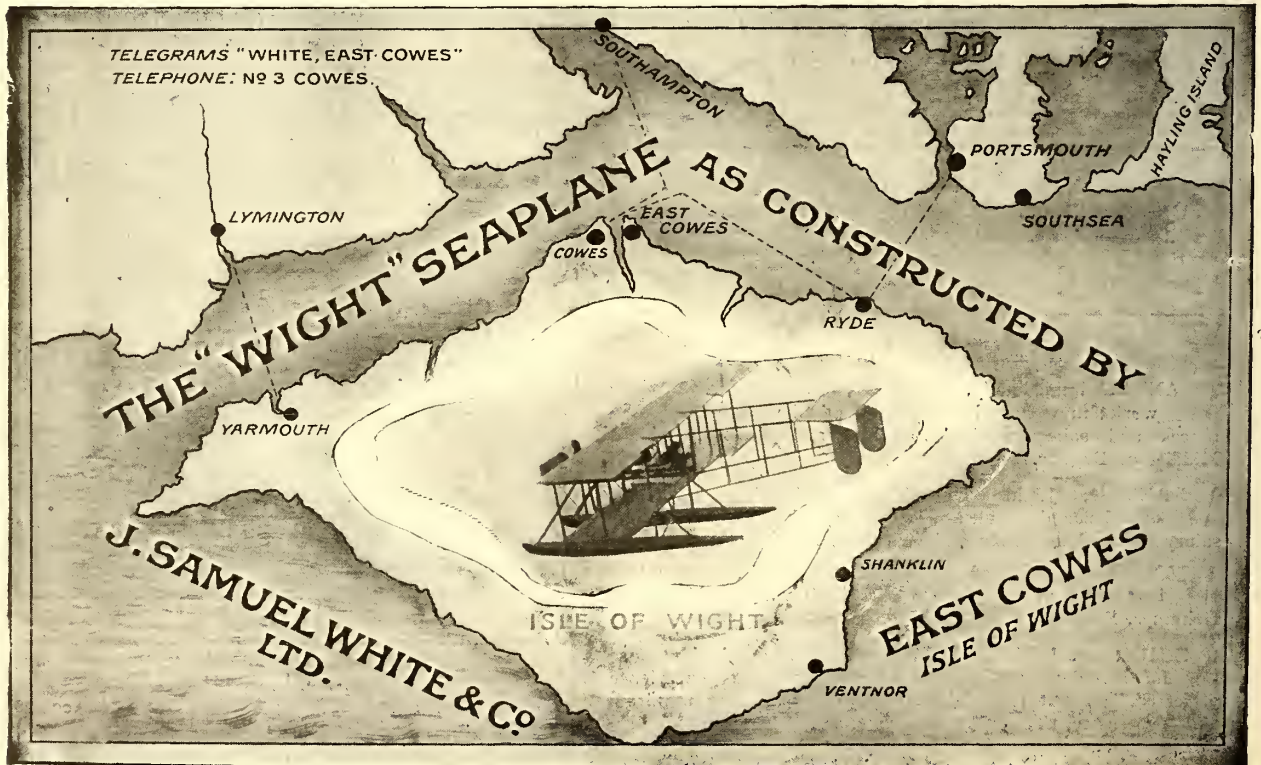
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THE AEROPLANE



Edited by C. G. GREY. ("Aero-Amateur")

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WEDNESDAY, NOVEMBER 25, 1914.

No. 22

ON ACTIVE SERVICE.



Photograph by Birkett, Percy Road, Shepherd's Bush

Mrs. Winifred Buller, of Shoreham, who has been our only aviatress since Mrs. Stocks' accident and since Mrs. Hewlett gave up flying, has now gone on active service with a volunteer motor ambulance corps, which is doing splendid work in Northern France. Mrs. Buller remarked before leaving this country that she was not much of a nurse, but she would at any rate see that the ambulance engines ran properly—which is one of the worst troubles of these corps. The plucky little lady is seen above in the Caudron biplane which she flew so well at Hendon before the war.

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Wars and Rumours of War.

If any intelligent person were asked to mention the most outstanding features of the present war he would probably reply, "Aircraft, Artillery; and Lies." Naturally enough, lies have been more closely concerned with these two arms than has any other branch of the Services. No one, for example, would think of inventing really handsome lies about the Army Service Corps, or the R.A.M.C. Also aircraft and artillery have been very closely linked together since this war showed their inter-dependence.

Without their enormous supplies of highly effective aeroplanes the German heavy artillery would have been practically useless, and without our smaller but more efficient aeroplane service our artillery—not to mention our infantry—could not have put up the splendid defence they have achieved. Also, without their aircraft the famous French "soixante-quinzes" would have been far less effective, especially of late when they have succeeded over and over again in getting inside the range of the German heavy guns and smashing them up. The French started serious co-operation between aircraft and artillery long before we did, and they are now reaping the benefit of their foresight. Apparently—judging from a letter from an artillery officer which appears in its proper place in the British military notes this week—we also are now using our aircraft in this way with excellent effect.

The latest form of artillery—anti-aircraft, or high-angle, guns—has been produced by the arrival of aircraft. And, by their growing use as bomb-droppers aircraft themselves are apparently becoming a branch of the artillery arm. These changes seem to indicate the entire separation in the future of artillery aeroplanes from the ordinary air scouts. Bombs and bomb-dropping are obviously matters for study by artillerymen, and the weight-lifting bomb-dropper will before very long be quite a different machine from any type of air-scout. The fact that both have wings and are driven by petrol motors is no more an argument in favour of their being part of the same corps than is the fact that both have wheels and are drawn by horses an argument in favour of horse artillery and Army Service Corps wagons being lumped together. In the future wings will be only a means of progress as an alternative for all arms to wheels or horses' legs. However, that is looking some way ahead.

The Rise of the "Lie Factory."

Presumably it is owing to the novelty of aircraft and of certain types of guns that the "lie factories" of all countries have fastened on these arms as their special property. The useful if inelegant phrase quoted has been coined by the Press of this country to describe the source of all German news, but the lie-factory is not the exclusive property of Germany, as anyone may judge who reads the extracts from our own "news agency" reports and from the stories of some of the "special correspondents" quoted and explained from time to time in the Naval and Military Notes in this paper.

No doubt the misguided activities of the Censorship and the Press Bureau are largely accountable for the huge output of our lie factories, for, as was pointed out

in these columns at the beginning of the war, and long before the daily Press had the courage to kick, an intelligent news service under official control could easily fill the papers with reliable information, and yet refrain from giving away information useful to the enemy. It might even succeed in misleading him, without materially deceiving our own people. As it is we are compelled to exist on mere rumours of the war, instead of receiving authentic news.

Naturally, one is all in favour of hiding any information of possible value to the enemy, such as the position or movements of troops abroad, or the numbers and location of our New Armies at home, or the particular "hiding place" of our Grand Fleet at sea, but we might be told a heap more about what our troops and ships are actually doing. Various papers have pointed out how a good story of the deeds of any particular regiment aids recruiting for that regiment. Sir Horace Smith-Dorrien, one of the best soldiers in our Army, told his troops—and the British nation—last week, why feats of arms cannot be told at once, but surely by now we might be told what battalions did well in the retreat from Mons and in the advance from the Marne, seeing that the Germans know perfectly well that the bulk of our Army is in the North-West, and left the line of the Aisne weeks ago. At present one can only learn of a regiment's doings from the Casualty Lists. A heap of killed and wounded and few missing means a big fight won. A quantity of missing and few killed and wounded means defeat—and, by inference, disgrace for that regiment. Few casualties means little fighting. At least that is how one reads it till the authorities see fit to explain better

What of the R.F.C.?

Take our own little corner of the Army for example. Judged on the lines indicated, the R.F.C. can have done little service as its casualties are few. But certain officers of the R.F.C. have been mentioned in dispatches, and certain N.C.O.s and men have been given special promotion or Distinguished Conduct Medals for work done before the advance to the Aisne, and being well up in the air, the R.F.C. has been seen and mentioned by the official "Eye-witness."

The acts which won these distinctions are now known to the War Office and there is no apparent reason why the people of this country should not be told the reasons for these awards. Practically the only stories the British public has had of individual feats by the R.F.C. have been based on accounts received second-hand by this paper.

Anyone who takes the trouble to buy a copy of the Paris "Journal" can read therein, under the heading "Citations dans l'Ordre de l'Armée"—which is almost the exact equivalent of our "Mention in Dispatches"—a brief description of each deed which has won mention, the paragraphs in each case giving as much information as those which were published in our papers last week describing the winning of certain Victoria Crosses. There seems very good reason why similar descriptions should be published telling of good work by British officers and men.

This is a matter purely concerning the War Office,

and not General Headquarters in France. If the latter were directly concerned one would plead that General Staff officers on active service have plenty to do without bothering their heads about the Press, but, as it is, they have to send these reports to the War Office in any case. Therefore, when once the reports are in this country they might just as well be made known to the people who have to pay for war in hard cash, or in the blood of those they love.

Also, these stories would aid recruiting, if, in fact, the authorities really want to encourage recruiting, which sometimes seems doubtful. Personally I should like to see them stop the folly of enlisting the best men and leaving the wasters behind. Far better carry conscription, and press the football loungers into service. There is little to induce a thinking man to enlist out of pure patriotism, when so many able-bodied men stay at home. Probably the best aid to recruiting would be a guarantee that as soon as our army passed the Rhine, looting would be officially organised, and all loot sold, the proceeds to be divided among the regiment capturing it. It was prize-money, not patriotism, which made Nelson's Navy. It was gold, not love of science, that induced men to die in the Klondyke.

All human motives are mixed. Some of the greatest saints are the biggest "poseurs." Even patriotism is seldom pure. Men learned to fly before the war because the air services promised extra pay, or offered opportunities for personal distinction, or because flying is a fine sport which they could not afford themselves, or, in some cases, because the Conquest of the Air seemed a romantic calling, or because the development of aerial navigation appeared to promise ultimate benefit to humanity and peace to the world—an end, in fact, which it will achieve. In many men all these motives were mixed up.

The Use of Advertisement.

Now these men are in the thick of war and motives are equally mixed. The typical "Popularity Jack" is a curse to any service at any time, but, unfortunately, he frequently wins D.S.O.s and other decorations, so if his thirst for popularity and publicity is going to lead to his putting up a performance of military value it seems a pity not to titillate that thirst by an occasional paragraph in the papers. Even the most purely patriotic officer, who carries through an arduous feat from the purest motives, is not averse to having that feat made known if it is published with official sanction in a properly dignified form—otherwise he could scarcely consent to wear medal-ribbons, which are in essence simply a diminutive poster advertising his own merits.

That being so, there seems to be no possible objection to making the truth known, for the space occupied in telling it would probably squeeze out of the papers many of the absurd rumours which now offend one's common sense, such, for example, as those about the enormous fleets of Zeppelins, the bombardment of our ships off the Belgian coast by Zeppelins and aeroplanes, the dropping of bombs on Dover by the German aviator Caspar, and so on. Incidentally, an intelligent Press Bureau would appoint an official whose duty it would be to explain all these silly stories in a common-sense way, much as this paper has done since the lie-factories on both sides started work.

All-pervading Rumours.

However, apart from newspaper lies, this war has been notable for the astounding quantity of rumours which have passed round from mouth to mouth with almost the velocity of wireless messages. Many of these rumours might well have been started from German sources with the idea of scaring or disheartening people in this country, such for example as that early in the war to the effect that the "Powerful" had been torpedoed and had gone down with all hands, including Admiral Jellicoe. The Press Bureau had the

sense to contradict it flatly, but only after long delay. A similar rumour has lately been afloat about the "Audacious," but the Admiralty's excellent habit of publishing casualty lists promptly, and with a full explanation of the circumstances, has allayed anxiety and has convinced people that whatever else may have happened to give foundation to the rumour no lives have been lost.

Of course, the most all-pervading rumour was the one about the Russian troops passing through England. It might have started from German sources, with the idea that men would not enlist if they thought the Russians were going to do all their fighting for them—which would be quite sound reasoning—or it might have been started by some well-meaning fool to hearten up those who were scared at the beating we received at the start—which seems the sort of thing an official at the Home Office might do. Still, the accumulation of evidence was extraordinary. Certainly enough troop trains came from North of the Border to have depopulated a fair proportion of Scotland of its young men, certainly certain railways essential to such a movement were closed for two days, and certainly the shipping people at the ports most concerned believe the story most firmly. Then the Press Bureau denied that any Russians had gone through, and forthwith someone explained the denial by saying they were not Russians, but Poles and Finns, the former because they could not be used in German Poland, and the latter because they were already half way to Archangel. One irresponsible idiot, on hearing this explanation remarked, "Well! If they are Finn soldiers, I suppose a Cockney would call the Press Bureau's story a 'bit fiek.'"

However, be that as it may, the country at large would be glad of a plausible explanation of the story, as well as a mere denial which can be explained away, for heaps of people—including men in the Services—still believe in it, or in variations of it.

The Scottish Wills-o'-the-Wisp.

The latest wild rumours are these current in Scotland to the effect that foreign aeroplanes have been all over the country, apparently looking to see whether our Battle Fleet is hidden in the Caledonian Canal, as the German Fleet is stored away in the Kiel Canal. It is really rather a pity the Caledonian Canal locks and things are not big enough to take the largest ships, as it would have been quite useful as a submarine-proof base.

Of course, the Germans know perfectly well, thanks to their submarines, where our Fleet is stationed, but apparently most people in this country think it ought to be anchored across the mouths of the Elbe and Jähde, to prevent the Germans from getting out of the Kiel Canal and Wilhelmshaven, just where it would be a perfect mark for the German submarines. At least so one would judge from the number of people who want to know how a few German cruisers got within range of Yarmouth in foggy weather.

Some of these people also want to know why our seaplanes at Yarmouth and Felixstowe did not fly out and drop bombs on the German cruisers and destroy them? I trust I am not giving away a deadly official secret when I repeat what I have said half a dozen times in the last year or two, namely, that seaplanes cannot, as yet, carry bombs big enough to destroy ships larger than destroyers, and that if they did they would have to come so low to ensure any accuracy of aim that they would be shot down by rifle fire. That is one very good reason for seaplanes not attacking, but there are perhaps others equally conclusive better known to those on the spot at the time.

However, there are the Scottish rumours in full blast, and General Ewart, C.-in-C. in Scotland, has taken the very canny course of offering £100 reward to anyone who can find the base from which the aeroplanes operate. That £100 ought to keep the rural population of rumour-mongers fairly busy hunting for

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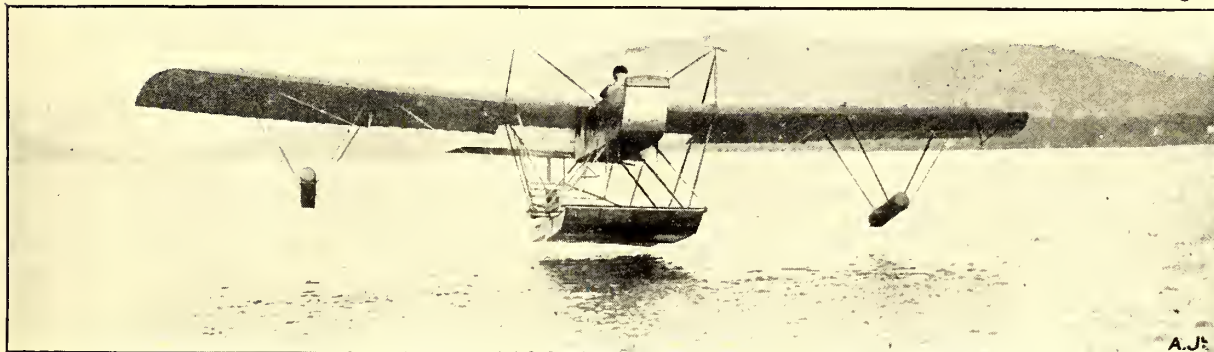
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aeroplane depots—with an armed custodian as per official notice. Mr. Heath Robinson really ought to do us a picture of "Hunting for Aeroplane Bases in the Ord of Caithness." I offer him the idea free.

Meantime our own aeroplanes have already flown more miles over German territory than German aeroplanes are likely to fly over the British Isles before the end of the war. As for example the exploits of the four Sopwith machines which went to Düsseldorf and Cologne, and the three Avros which performed last week at Friedrichshafen, let alone the miles covered by other machines over Belgian and French territory occupied by Germans.

English Mental Activity.

Some idea of the fertility of even English brains when stirred up by excitement may be gained from the following notes, which have collected themselves during the past two or three months.

The first was written by a member of my staff spending a holiday in the Lake District in September, and as the population is mostly Celtic I may be wrong in labelling it as English mental activity. It is really done to divide it from Scotland's efforts. Here is his account of things as they were then:—

An unfortunate mortal who fled to the wilds of Westmorland, where there are so many square miles to the house, and so many acres to the sheep, in hopes of soothing a weary brain, discovered the place apparently in a state of siege. Persons of unquestionable respectability had met persons of equal respectability everywhere who had seen German aeroplanes and Zeppelins at various desolate spots, and a section of the R.F.C. was reported to be in pursuit. Mr. Hucks' machine had been seen resting on Shap Fell armed with blazing searchlights, a German aeroplane had been watched encircling the Langdale Pikes, and a cap had been picked up in Borrowdale containing a letter written in German, the contents of which implied that it had been dropped from a Zeppelin on its way to destroy Barrow-in-Furness. A German was reported to have been shot for germifying a local reservoir, and the chief constable of a highly respectable town was said to have been arrested as a German spy. Considerable indignation was expressed everywhere that the Windermere waterplanes had not been commandeered by the R.N.A.S. Every house of any standing had been converted into a hospital, and the good ladies thereof were simply thirsting for a consignment of wounded troops. Truly it was a relief to get back to London, in spite of its half-hourly editions of half-penny rumours—most of which pertain, at any rate, to the other side of the Channel.

It is amusing to see how far wide of the mark the rumours proved to be. The same member of the staff, moved by his experiences to start an amateur factory on his own account, recently perpetrated the following outrage on his long-suffering editor:—

This is a discontented world, and everyone has something to grumble about. One correspondent complains, in the bitterness of terms, that the authorities are neglecting to commandeer all available aeroplanes, and he points out that certain craft which are being relegated to oblivion have distinct possibilities. He reminds us, for instance, that there is a triplane of colossal proportions and of princely antecedents lying

neglected not many miles from Weybridge, which would make an excellent juggernaut to place in front of the British centre. He also suggests that it would make a splendid three-storied transport for hundreds of weary-footed Tommies, for its powers to manoeuvre (on the ground) are known to all. Further, he suggests that, if the propeller were geared down sufficiently, it would make an excellent chaff-cutter, field potato-peeler, or trench-digger. He also proposes that machines of the "secret circle" racing type, which have a span of some 14½ feet, would fill a variety of uses; inter alia, they might serve as wreaths for the vanquished or haloes for the victors, at the discretion of the officer commanding; and when the great day comes, if they can be persuaded to fly, which Heaven forbid we should doubt, they could fulfil these diverse functions in Berlin and Paris on the same day. Their possibilities as travelling field-tables or for other domestic uses are obvious.

Our informant also speaks with some emotion of a price-less creation, the Chutamarine (one has a dim recollection of the name), noted for its habit of falling into the sea. It is a biplane of the largest size, calculated to save its occupant from the eagle-like swoop of a Taube by shedding its wings, propeller, and other impedimenta, and plunging into the saline blue, where, disguised as a submarine, it wins its way back to the base at Bermondsey, where its heroic pilot emerges immaculate in the traditional stove-pipe hat, black stock, long-tailed coat, and spats, sacred to Chutamarinists and M. Deibler.

Of course this is all absolutely untrue, but it shows how a fairly fertile brain can turn out material for rumours.

The following note shows the slender base on which rumours rest. It was sent me by a valued correspondent who formerly lived at Ditton and is now serving his King and his ungrateful country:—

Lady neighbour calls and informs your correspondent's wife that a Zeppelin passed overhead last night. "No, she didn't actually see it, but there is no doubt about it."

Specially interviewed on behalf of THE AEROPLANE, said lady neighbour says she had the information from a neighbouring shopkeeper, who is positive and definite about it all.

Shopkeeper then interviewed. "No, he didn't get out of bed to see the airship, but he heard the engines right enough. Must have been flying very low, and stopped for some time right overhead. Not sure of the time, but it was pitch dark and the street lamps still alight." (Picture the valiant one with his head well under the bedclothes, awaiting in fear and tribulation the dropping down his chimney of the Zeppelin's first 100 kilo. bomb!)

What actually occurred: Belated resident coming home from town charters taxi at railway station. At the cross roads outside local shop, driver pulls up to inquire of his fare which turning to take. Hence the scare!

Most of the scares raised in this country rest on no better foundation, and the remainder are pure invention. Still, rumours are useful things, for they help to wake people up. There is a classic saying of the late Artemus Ward to the effect that "Some fleas is good for a dog, they keeps him from brooding over the fact that he is a dog." On the same principle, some scares are good for Englishmen, they keep them from brooding over the fact that they are English.—C. G. G.

Comforts for the Flying Services.

The cash contributions received during the past week are as follows:—Cellon, Ltd., £5 5s.; Blackburn Aeroplane and Motor Co., Ltd (Employees), £4 5s. 10d.; Mrs. A. Parke, £3; Sub-Lieut. C. Thompson, R.N., £2 10s.; Flight-Commander Barnby, R.N., £1; Mr. H. Duck, £1; Mr. H. Meates, 10s. 6d.; Mrs. F. B. Fowler, 10s.; Mann and Grimmer (Employees), 10s.; Vickers Air Mechanics (fifth donation), 6s. 6d.; (sixth donation), 10s.; A. C. H., 2s.; Cecil Sutton (aged 12), 1s. Total £19 10s. 10d., making a total to date of £134 9s. 2d.

Mrs. Sueter states that in addition to the cash contributions above, she has received many "woollies" during the week. The Navy League, Mrs. Warneford, The Pollockshields Work

Party and the British and Foreign Seamen's Society have all sent large parcels. Nine large cases have already been forwarded and safely received, and the men's appreciation of the garments is most hearty. Various letters received from Commander Samson, R.N., D.S.O., and Flight-Commander Barnby, R.N.A.S., indicate the gratitude which is felt for the kindness of friends at home.

The weather is getting steadily colder, and the need for warmth proportionately greater. Gifts in cash and kind are needed in a steady stream for some time to come.

Contributions for the R.N.A.S. should be sent at once to Mrs. Sueter, The Howe, Watlington, Oxon.

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From the "London Gazette," November 17th, 1914.

ADMIRALTY, November 14th.

ROYAL NAVAL VOLUNTEER RESERVE:—

Temporary commissions in the Royal Naval Volunteer Reserve have been issued as follows:—

Lieutenant-Commander.—J. R. Boothby, A. Cherry Garrawd, H. E. Perrin, and his Grace the Duke of Westminster.

Lieutenant.—Filson Young, Frederick Romer, Alfred A. E. Fremantle, Ellice Victor Sassoon, Arthur Robert Stuart Clark Kennedy, Norman Ebbutt, F. Marchison Jones, H. Pirie-Gordon, C. M. Hay, A. Keiller, F. W. Lucas, R. F. Macfie, J. W. Stocks, E. H. Pooley, the Right Hon. Lord Torrington, Basil Kerr, John Pittilla Kinghorn, Percy Ashton, Arthur de Wolf Mulligan, Norman Graham Creall, John Alexander Macqueen, Arthur Hildebrand Ramsden Tagore, Alfred Robertson, Stanley Lambert, and Rollo Appleyard, M.I.C.E.

Sub-Lieutenant.—Robert Waley Cohen, Norman Henry Nutt, Peter Colvin White, Roland H. Topper, G. F. Baker, Hugh K. Lunn, George D. Lowdell, Ronald Jukes, H. V. Scott Willcox, John Henry Atkinson Bell, Norman Clark, James Bainbridge, Merwyn Hay Wake, Edward Hutchinson, Ralph Wilks Herbert, Wardill Potts, Selby Ord, the Right Hon. Lord Loughborough, William Christopher Smith, William Stevenson Clucas, John Melville Shillington, Gilbert Oswald, Gregory Robinson, Sidney John White, George Lawson Munro, Leonard Hackett, Hugh Alvar Geaussen, Richard Evelyn Beauchamp Meade-King, Henry Andrew Robert Norton, Charles C. Turner, Charles William Stanley Paine, Leonard Arthur Durrant, Charles Bridglan, Arthur H. Protheroe, Henry Field, John Weightman, Cecil H. Hayward, W. Carlisle.

WAR OFFICE, November 17th.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—The undermentioned appointments are made:

Wing Commanders.—Dated November 9th, 1914: Major (temporary Lieutenant-Colonel) Hugh M. Trenchard, C.B., D.S.O., the Royal Scots Fusiliers, from officer commanding and officer in charge of Records, and to retain his temporary rank; Brevet Major Charles J. Burke, the Royal Irish Regiment, from a squadron commander, and to be temporary lieutenant-colonel; and Major John F. A. Higgins, Royal Artillery, from a squadron commander, and to be temporary lieutenant-colonel.

Captain Ian M. Bonham-Carter, the Northumberland Fusiliers, a flying officer, to be a flight commander. Dated November 2nd, 1914.

The following is substituted for the notification which appeared in the "Gazette" of November 2nd, 1914:—

The undermentioned appointment is made: Captain Arthur B. Burdett, the York and Lancaster Regiment, from a flying officer, to be a flight commander. Dated October 17th, 1914.

SPECIAL RESERVE OF OFFICERS.—Royal Flying Corps (Military Wing).—The appointment of Mark Dawson to a second lieutenantancy, which appeared in the "Gazette" dated August 11th, 1914, is cancelled.

* * *

A Second Supplement to the "Gazette" of November 17th, published on November 18th, contains the following military appointments:—

WAR OFFICE, November 18th.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—The undermentioned appointments are made: The undermentioned captains, flight commanders, to be advanced to squadron commanders, and to be temporary majors. Dated November 9th, 1914: William D. Beatty, Royal Engineers; Captain George W. P. Dawes, Princess Charlotte of Wales's (Royal Berkshire Regiment); and Captain Archibald C. H. MacLean, the Royal Scots (Lothian Regiment).

Captain Rutter B. Martyn, the Duke of Edinburgh's (Wiltshire Regiment), a flying officer, to be advanced to flight commander. Dated November 9th, 1914.

Second Lieutenant Archibald B. Ford, Special Reserve, to be a flying officer. Dated October 28th, 1914.

A Third Supplement to the "Gazette" of November 17th, published on November 19th, contains the following military appointments:—

WAR OFFICE, November 19th.

REGULAR FORCES.—Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—The undermentioned to be second lieutenants (on probation): Percy Russell Grace. Dated November 12th, 1914. Malcolm Grahame Christie. Dated November 20th, 1914.

* * *

From the "London Gazette," November 20th, 1914.

A Second Supplement to the "Gazette" of November 20th published on November 23rd, contains the following military appointments:—

WAR OFFICE, November 23rd.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS:—

Royal Flying Corps (Military Wing).—Second Lieut. Arthur V. Bettington is confirmed in his rank.

NAVAL.

The following appointments were notified at the Admiralty on November 17th:—

Flight-Lieut. J. H. Lidderdale has been promoted to the rank of flight-commander, with seniority November 13th, and appointed to the "President," additional, for duty as instructor at the Central Flying School.

Flight-Lieut. I. W. S. Dalrymple-Clarke re-appointed as acting flight-commander, to date November 13th.

ROYAL NAVAL RESERVE.—Acting Sub-Lieutenant H. J. Batchelor, transferred to Royal Naval Air Service, and entered as probationary Flight Sub-Lieutenant and appointed to the "Pembroke III," for Royal Naval Air Service, to date November 15th.

ROYAL NAVAL VOLUNTEER RESERVE.—Lieut. R. Cleave has been transferred to "Pembroke III," for Royal Naval Air Service, to date November 13th.

* * *

The following appointments were notified at the Admiralty on November 19th:—

ROYAL NAVAL AIR SERVICE.—The following have been entered as probationary Flight Sub-Lieutenants, and appointed to the "Pembroke III," for Royal Naval Air Service, to date as mentioned:—A. Q. Cooper (temporary service), November 14th; L. P. Openshaw and C. E. Brisley, November 16th; W. H. Wood, November 11th; F. J. Bailey, November 12th; F. W. Gamwell and R. D. G. Sibley, November 16th; E. Parker, November 14th.

* * *

The following appointment was notified at the Admiralty on November 20th:—

ROYAL NAVAL AIR SERVICE.—Mr. R. B. Pullin has been entered as probationary Flight Sub-Lieutenant, and appointed to the "Pembroke III," additional, for Royal Naval Air Service, to date November 12th.

* * *

The following appointments were made at the Admiralty on November 21st:—

ROYAL NAVAL AIR SERVICE.—Messrs. T. V. Lister and T. F. N. Garrard have been entered as Prob. Flight-Lieutenants and appointed to the "Pembroke III," for R.N. Air Service, to date November 20th.

* * *

The following appointments were made at the Admiralty on November 23rd:—

ROYAL NAVAL AIR SERVICE.—Flight Sub-Lieuts. B. C. Meales and T. H. England and Temporary Flight Sub-Lieuts. R. P. Cannon, A. K. Robertson, E. H. Dunning, R. E. Penny, and E. R. Moon, to the "Pembroke III," for Royal Naval Air Service, to date November 18th.

Messrs. G. H. Reid, entered as probationary flight sub-lieutenant for temporary service, to date November 19th, and C. N. Leeston-Smith and W. G. Moore, entered as flight sub-lieuts., to date November 19th and November 16th respectively.

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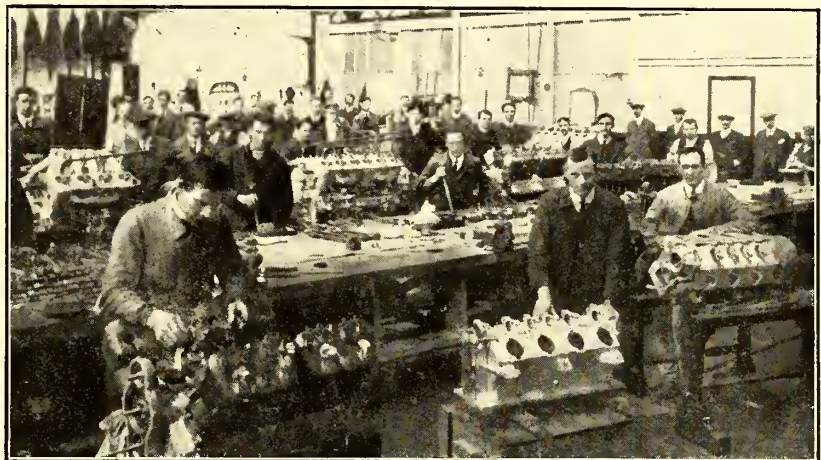
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The Secretary of the Admiralty, through the Press Bureau, makes the following announcement:—

On Saturday a flight of aeroplanes, under the command of Squadron Commander E. F. Briggs of the Royal Naval Air Service, with Flight Commander J. T. Babington and Flight Lieutenant V. S. Sippe as pilots, flew from French territory to the Zeppelin Airship Factory at Friedrichshafen.

All three pilots in succession flew down to close range under a heavy fire from guns, mitrailleuses, and rifles, and launched their bombs according to instructions. Commander Briggs is reported to have been shot down, wounded, and taken to hospital as a prisoner. Both the other officers have returned safely to French territory, though their machines were damaged by gun fire. They report positively that all bombs reached their objective, and that serious damage was done to the Zeppelin factory.

This flight of 250 miles, which penetrated 120 miles into Germany, across mountainous country, in difficult weather conditions, constitutes with the attack a fine feat of arms.

* * *

This raid, following on those at Düsseldorf and Cologne, will evidently have a strong moral effect in Germany, seeing that it strikes at the heart of Zeppelin production, and not merely at outlying frontier stations. It is to be hoped that it is only a preliminary to a regular series of raids by fleets of big, powerful bomb-droppers of the type suggested recently.

The officers concerned are, of course, well known to those connected with aviation. Squadron Commander E. Featherstone Briggs, an Engineer Lieut.-Commander, R.N., on his Naval Service, was appointed to the R.N. Flying School at Eastchurch for engineer service, when the school was formed, and produced there a high state of efficiency. As a flier he tended towards the scientific side, and the mass of instruments with which he always flew were a standing joke among his friends. Nevertheless, he is a thorough sportsman, and his breaking the British altitude record by reaching 15,000 feet on his old Blériot with Le Rhone engine was a very fine performance. It will be remembered that he was badly frost-bitten in the process. Of late he has done much good work in Belgium and France on land machines.

Flight-Commander J. T. Babington—who joined the R.N.A.S. as a Sub-Lieut., R.N.—is one of the finest seaplane pilots in the Navy, and his performances with the huge 160-h.p. Shorts were extraordinary. Recently, he was acting as instructor at the Central Flying School, and of late has been on active service.

Flight-Lieut. Sippe, formerly a Bristol pilot, has already distinguished himself in Belgium, and is now consoled for the shabby trick played on him by his Renault-engined B.E., which let him down at the start of the Düsseldorf raid.

All three officers flew Avro biplanes (80-h.p. Gnomes), thus once more vindicating the high esteem in which these machines are held by experienced aviators—as expressed in this paper.

One learns that the organisation of the raid was carried through by Squadron-Commander Philip Shepherd, R.N.—a Lieutenant-Commander, R.N., on his Naval service—who has for long been senior instructor at the Central Flying School. In planning the affair he was ably assisted by Lieut. Pemberton-Billing, R.N.V.R.—attached R.N.A.S.—whose knowledge of French and German were of considerable value. The story of how these plans were laid will be highly appreciated when the cessation of hostilities makes it possible to tell it.

With chivalry and courtesy the German officer commanding at Friedrichshafen wired to England to say that Commander Briggs is not seriously wounded, and added an appreciation of his gallantry in attack and in defending himself against arrest when captured. The other two officers returned safely to their base in France.

Despite German denials it is practically certain that at least a dozen bombs burst in the Zeppelin works, and one may therefore assume that some dislocation of routine has been caused. The airship shed was apparently not the chief target, the desire being rather to hamper future production.

* * *

The batch of Gazettes to the Royal Naval Volunteer Reserve published above consists almost entirely of officers recently appointed to the Armoured Car Brigade or to the London Anti-

Aircraft Defence Forces, and includes a number of well-known names.

Lieut.-Commander J. R. Boothby is a brother of Wing-Commander Boothby, R.N., who commands the Armoured Car Brigade; Lieut.-Commander Cherry Garrard will be remembered as accompanying the late Capt. Scott's expedition to the South Pole; Lieut.-Commander H. E. Perrin, who is the Adjutant of the Brigade, is the Secretary of the Royal Aero Club; and Lieut.-Commander the Duke of Westminster, who was recently with one of our cavalry regiments in France, has taken command of a section of the Armoured Car Brigade at the special request of high authorities.

Lieut. Filson Young is the well-known writer, who first made his name by writing on motoring subjects.

Lieut. E. V. Sassoon will be remembered as a pilot of a Sommer biplane and a Blériot monoplane some years ago. He was interested in the Universal Aviation Company, which did much in the early days to popularise aviation, and with him in that concern were the late Mr. J. D. B. Astley, who was killed at Belfast, and Mr. Reginald Cary, who is now a director and the general manager of the Sopwith Aviation Company. One may perhaps now make it known that it was due entirely to Mr. Sassoon's backing that THE AEROPLANE came into existence. At the beginning of the war Mr. Sassoon enlisted as a special constable. He afterwards went to France with his own car as a volunteer motor driver, and when the car had retired from business he was put on to mechanical transport work, doing practically a captain's work without a commission. He has now joined the Navy, so that his activities have been fairly varied considering the shortness of the period covered thereby.

Mr. R. F. MacFie, naval engineer, aeroplane designer, and soldier in the South African war, is, of course, well known to everyone connected with aviation, and one is glad to see him now occupying his proper rank.

Mr. J. W. Stocks is well known to motorists as the manager of the de Dion Company, which recently produced a very promising aeroplane engine.

Another interesting appointment in this batch is that of Mr. C. C. Turner as sub-lieutenant, R.N.V.R. Mr. Turner's articles in the "Observer," "Pall Mall Gazette," and the "Field" have probably done more to increase interest in aviation among people of the best class than have those of any other writer. He is himself a certificated aviator and has, besides, an extensive knowledge of ballooning. Throughout the period when this paper was fighting so hard for the existence of the aeroplane industry Mr. Turner was its most valuable ally, and though he came in for some hard words at times from those in authority, his criticisms have in almost every case been thoroughly justified by events.

* * *

Flight-Commander J. H. Lidderdale, R.N., recently appointed instructor at the Central Flying School, was an assistant-paymaster R.N., appointed to that establishment as secretary to the Commandant when it was first formed. In that position he did much valuable work, and at the same time found time to become an aviator of considerable value.

Flight-Commander J. W. S. Dalrymple-Clark was originally an officer of the 17th Lancers. Some years after retiring from the Army he took to flying and joined the Royal Naval Air Service.

* * *

It was reported from Yarmouth on November 19th that Flight-Lieutenant C. Lan Davis had a narrow escape from drowning on that morning. While flying about ten miles from Yarmouth his machine was completely smashed up through the explosion of the engine. The aeroplane dropped into the sea, and the North Shields drifter "Noreen" saved the officer and his passenger, Petty Officer-Telegraphist Hendry, bringing them to Yarmouth. When the machine fell Hendry swam clear, but Lieut. Davis was strapped in his seat. Hendry, however, gallantly dived underneath the aeroplane and got the officer clear.

Should this report be verified, one hopes to see the Petty Officer's performance officially recognised. He is one of the oldest hands in the R.N.A.S.

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P.C. B.4

H.M. naval airship "Eta" landed in Gatton Park, Redhill, the seat of Sir Jeremiah Colman, on November 18th, and arranged to remain there for the night. On arrival she was covered with snow, a storm lasting several hours having occurred throughout East Surrey.

* * *

The Central News Agency, ever intelligent, sent out the following cryptic message on November 20th:—"It was reported at Dover last night that an aircraft was seen over Dungeness during the evening."

The "Express" says:—"There is no indication in this message as to the nationality of the airship. The Press Bureau, while permitting publication, cannot vouch for the accuracy of this statement."

[It seems extremely likely that things of miscellaneous nationalities were in the air on the evening of the 20th in different parts of the globe, including aeroplanes, monoplanes, biplanes, "hydroplanes" (as journalists love to call them), waterplanes, seaplanes, "canards," airships, kites, balloons, and rumours.—Ed.]

* * *

Apropos "woollies" for the R.N.A.S. Mrs. Murray Sueter has received the following letters during the past week:—

Commander Samson says: "Thank you so much again for the clothing sent us. It is a great pleasure to all of us to know that there are people in England going to such trouble for us. Everybody is extremely grateful." Flight-Commander Barnby, writing from a Northern Air Station where the cold is intense, says: "I am writing to thank you most sincerely for the warm clothing you were kind enough to send the men at this station. The arrival of the clothing coincided with the first snowstorm here. I distributed it at once to the men. Consequently you may rest assured that their gratitude is as warm and sincere as the kind feelings which have prompted the gift."

MILITARY.

The various appointments and promotions of officers of the Royal Flying Corps gazetted during the past two or three weeks indicate at any rate to some extent the present development of the Royal Flying Corps, and suggest immense possibilities for the future.

The well-deserved promotion of Sir David Henderson, K.C.B., D.S.O., from substantive Lieut.-Colonel and temporary Brigadier-General to the substantive rank of Major-General, will be welcomed by everybody. Sir David Henderson has thoroughly won his promotion on the work he has done in bringing the Corps to its present high state of efficiency, since he deliberately gave up the much coveted position of Director of Military Training for the newly created post of Director-General of Military Aeronautics.

Following on General Henderson's appointment came those of Major (temporary Lieut.-Colonel) H. M. Trenchard, C.B., D.S.O., Major C. J. Burke, commanding No. 2 Squadron, R.F.C., and Major J. F. Higgins, D.S.O., commanding No. 5 Squadron, R.F.C., to be Wing Commanders, all with temporary rank of Lieut.-Colonel, thus promoting these three officers to practically the same rank as that held by General Henderson as Director-General of Military Aeronautics. The supposition thus is each of the three new sections or "wings," as they may perhaps be called, of the Royal Flying Corps will be approximately commensurate in size with the whole Royal Flying Corps as it was at the outbreak of war. These three appointments will be welcomed by everybody who has followed the fortunes of the Flying Corps.

Colonel Trenchard, as chief of staff to Captain Godfrey Paine, C.B., M.V.O., R.N., at the Central Flying School, brought that establishment to a state of discipline and efficiency which, owing to the heterogeneous composition of the personnel, seemed almost an impossibility, and as Commandant of the Military Wing, R.F.C., since the outbreak of war he has exercised the same salutary influence over the new drafts of the Royal Flying Corps at Farnborough.

Colonel Burke, as Captain Burke, was one of the first of our military aviators, and was one of the little group who did such splendid work on Salisbury Plain during 1911. Some of his exploits in those days on the original "Military" Far-

mans are still historic. Since then, as Officer Commanding No. 2 Squadron, R.F.C., at Montrose, he has succeeded in making that squadron one of the most efficient in the Corps, and has organised the various successful journeys between Farnborough and Montrose carried out by the Squadron.

Colonel Higgins, to whom reference was made last week, did extremely good work with No. 5 Squadron at Farnborough, and was responsible for a large amount of highly valuable experimental work in bomb-dropping, wireless and high-speed "scout" flying.

* * *

The new appointments of various Captains R.F.C. to be Squadron Commanders, with rank as temporary Majors, are equally gratifying to the friends of the Flying Corps.

Major Beatty was a very early student of aviation, and was one of the many excellent pilots turned out by the old Avro School at Brooklands. His work with the Royal Flying Corps has been chiefly concerned with the organisation of matériel at Headquarters, and as such he has done extremely valuable service.

Major George Dawes was also one of the earliest of our aviators, and has made many remarkable flights, including some experimental work in India of a highly instructive nature.

Major MacLean, who like Major Dawes was at one time an officer of No. 2 Squadron, has more recently been an instructor at the Central Flying School, where his personal influence with those under his command, and his ability as instructor, have provided the Service with a number of excellent officers.

Captain Martyn, who now becomes a Flight Commander, is another officer of No. 2 Squadron who has distinguished himself. Captain Bonham-Carter, also promoted to Flight Commander, was a flying officer in No. 4 Squadron, and was mentioned in dispatches from General French. Captain A. B. Burdett, who was also mentioned in dispatches, was previously an officer in No. 6 Squadron.

* * *

The official statement issued from Headquarters and published by the Press Bureau relating to the obsequies of the late Lord Roberts in France includes the following passage:—"At this moment a fresh sound was heard above the roar of the artillery and the brassy music of the trumpets as a British aeroplane, one of the aerial guard that had been watching and protecting the procession, swooped up into sight, circled the square, and dipped in salute."

* * *

The following passages in the descriptive account which has been communicated to the Press Bureau by an Eye-Witness present with General Headquarters deal with aircraft. It was published on November 20th, and continues and supplements the narrative published on the 17th inst. of the movements of the British Force and the French Armies in immediate touch with it:—

"November 16th.—For the last ten days the weather has been much against aerial reconnaissances. It has either been so misty that nothing can be seen, or so windy as to interfere with flying. There has also been a good deal of rain, which has added to the discomforts of active service."

Dealing with the events of Sunday, November 15th, the Eye-Witness says:—

"The weather on this day was about the worst we have yet experienced. It was bitterly cold and rain fell in torrents. Nevertheless, in spite of all difficulties, our aviators carried out a successful reconnaissance. For some time they hovered over the German lines, observing the emplacements of batteries and searching the roads for hostile columns in the midst of a storm of driving snow and sleet which was encountered at high altitudes."

* * *

The following passage from the descriptive account, published on November 23rd, which has been communicated to the Press Bureau by an Eye-Witness present with General Headquarters, continuing the narrative published on November 19th, deals with aircraft:—

"November 20th.—Once more there is no change to record in the military situation on our front. The great change that

has occurred has been in the weather, for winter has now set in in earnest. A miserable afternoon of snow and slush has been succeeded by a night of frost, and this morning is keen, calm, and bright, and promises well for the aviators, who have recently been so much hampered in their work."

[Will people please remember that the safety of the aviators depends on the fitness of the air mechanics (both R.F.C. and R.N.A.S.), and that in the weather described above warm clothing is needed if the men are to work properly? Subscriptions are still needed for both funds.—Ed.]

* * *

It is officially reported from the General Headquarters of the Expeditionary Force, under date November 3rd, that Lieutenant W. R. Read, 1st (King's) Dragoon Guards and Royal Flying Corps, has been wounded. He must not be confused with Lieut. A. Moutray Read, of the Northamptonshire Regiment, also of the R.F.C. and wounded.

* * *

One learns with great regret that a serious accident occurred on Friday morning last at the Central Flying School to Captain T. O'B. Hubbard, R.F.C., one of the senior instructors at the school. Details of the accident cannot be obtained at the moment, but it is stated that he was descending alone on a Henri Farman in a bumpy wind when a gust dropped the nose of the machine so that it struck the ground before he could get it up again. It was reported that he had broken both his legs, but another report states that only one leg is broken.

All will wish Captain Hubbard a quick recovery, and will offer him every sympathy in his bad luck. He has long been regarded as one of the most skilful and safe pilots in the Flying Corps, as well as one of the most serious students of aviation in this country. His services to the progress of aeronautics in the past have been very great, for he instilled new life into the Aeronautical Society during his secretaryship, and he has written or translated in conjunction with Mr. Ledebor several aeronautical works of considerable value.

* * *

It is reported that Mr. B. C. Hucks, now a subaltern of the Royal Flying Corps, recently had a narrow escape while flying on service. It appears that the base of a shrapnel shell fired by a high-angle gun cut through the lower plane of an Avro he was flying, and penetrated thence into the fuselage just in front of him, fortunately without smashing either a wing spar or a fuselage longeron. Happily he was himself unhurt and was able to return to the R.F.C. landing ground without further damage.

This occurrence was apparently the basis of a report which appeared recently in a daily paper to the effect that an officer of the R.F.C. had had a shell through the fuselage of his machine. There is, however, some difference between a complete shell and the base thereof after bursting.

An officer of the Royal Artillery—heavy guns—writes under the date November 6th as follows:—

"The Air Service, on both sides, is simply wonderful, and has had an extraordinary effect on the whole business. The first thing one does on coming into a place is to get everybody under cover as much as possible, and then to dig deep trenches. After that one posts men to look out for aeroplanes, and when one is sighted or heard (which latter generally happens first) the look-out shouts 'Aeroplane,' and everybody goes to ground and remains there till one of us officers has made out what it is. Each nation has a distinguishing mark printed on its machines, so that one can tell them from below. I heard yesterday, however, that the Germans are putting our mark on some of their machines. It is a horrid, low trick, if it's true, as it is equivalent to a warship sailing under false colours.

"I hear the generals out here are loud in their praise of the heavy batteries, and I'm glad to say we've been complimented on our shooting. According to our airman, we've done any amount of damage to the enemy's guns.

"I think the air is about the safest place from what I've seen so far. The German anti-aircraft guns shoot at our aeroplanes every day, but they haven't brought one down yet."

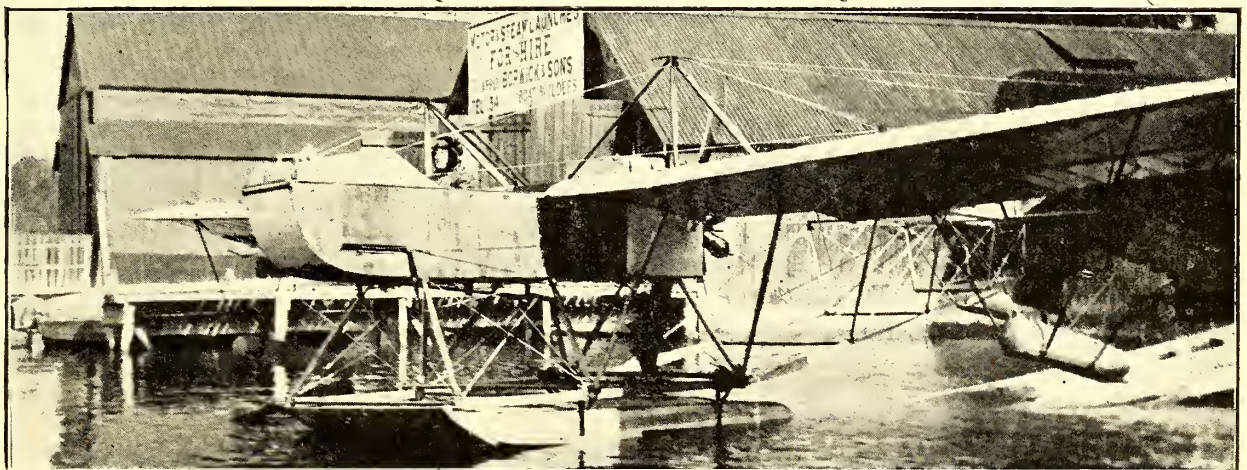
[This is the first intimation we have had of the detachment of single aviators from the R.F.C. for duty with artillery. A year or more ago it was suggested in this paper that ultimately we should arrive at a stage of development when each artillery brigade would have its own aviators permanently attached to it. The idea was scouted at the time, but this seems to be the beginning of such a system. It appears that a small number of aeroplanes thus used, forming an integral part of the brigade, so many to each battery, always training, moving, and working with that battery, would bring about still higher efficiency. One imagines that the pilots will be officers of that battery, and not merely detached from the personnel of the R.F.C., for trained artillery officers would be specialists in this branch of aviation. That is to say, they will be artillery officers who fly, and not merely R.F.C. officers who happen to know something about guns. They will fly single-seaters, and so save the expense of sending up a pilot and an observer to do work one man can do equally well.—Ed.]

* * *

A dispatch rider writes to his father under date November 9th:—"As a precursor, the other day a bullet missed me by a few inches. It was aimed at an aeroplane and landed on earth again by me. I dug it out and am keeping it as a souvenir."

FRANCE.

It was officially announced in Paris on November 19th that the previous afternoon a German aeroplane alighted in the French lines near Reims. The two officers on the machine



A NEW WATERPLANE.—The "pusher" monoplane belonging to the Northern Aircraft Co., Ltd., on Windermere.

(Photograph by Herbert, Windermere)

had lost their way. They rushed, revolver in hand, on a peasant woman to question her about the locality, but at the same moment some mounted men attached to Army Headquarters in the vicinity arrived and captured both aviators and machine.

* * *

For the following notes on the latest phase of aviation we are indebted to M. Pierre Maréchal, who received them from a friend in France:—

Despite the silence of Headquarters on the daily exploits of our aviators, it is nevertheless possible to give some account of the important part played by the fifth arm in the present war. Foot, horse and guns rival one another in courage and endurance, and one does not wish to praise one more than another; but aviation has brought so many new elements into modern tactics that one must devote attention to it.

When, at the end of the campaign, all its phases shall be revealed in detail, it will be possible to render to the Army of the Air the homage worthy of its great services. For the time being, one must be content with stories of combatants when chance permits one to interrogate any of them, and one learns many interesting things on these occasions.

Recently I had a long talk with a pilot whose escadrille has been at work since the beginning of the war. He was then at the base to take delivery of a new machine, and left the same day. At his request I will withhold his name and will refrain from personalities, contenting myself with reference to the pilots of the Voisin Escadrille No. 14, among whom are the following aviators: Lieuts. Mouchard, Coutisson, de Clerck; Adjutants Nardin, Boiteau, and Jemel, and Sergeant Dubuis.

The duty of this squadron is purely "bombardment," and not reconnaissance, and each pilot had already covered something like 4,000 kilometres during the war. The pilot whom I interviewed told me that the appearance of our machines causes a panic in the enemies' lines. The Germans have christened the Voisin the "square" aeroplane, because of the two planes of the cellule being equal in area, and they have an extraordinary fear of it. When the approach of one of these machines is signalled entire regiments disperse precipitately to escape the murderous bursting of our projectiles. The German batteries conceal themselves carefully and only reveal themselves to the observers by the white smoke of the discharge when firing. In order to conceal themselves still further the gunners have received orders to cease firing as soon as an avian is signalled in the neighbourhood.

The scare which these machines cause is easily explained by the wonderful results obtained by the bombardment squadron. "V. 14," for example, has a number of exploits to its credit which are too long to enumerate. One may, however, quote the exploit of one pilot of the escadrille, who, on September 11th, dropped a bomb on the retreating Germans, which caused the death of 43 men and about sixty horses.

Two sorts of bombs are used, a small one of 10 kilos. (about 22½ lbs.), of which a dozen can be carried at a time, and a large bomb of 60 kilos. (about 135 lbs.), of which two are carried at a time. The effects of this latter are terrible. When one is dropped the machine bounds up into the air, and a moment afterwards the echo of the explosion reaches the pilot, although he is flying at anything between 8,000 and 10,000 feet.

Thanks to a special mechanism which causes the bomb to burst hardly a metre from the ground, certain bombs have the property of literally cutting off the legs of horses and men in the neighbourhood.

In order to destroy enemy aeroplanes when they venture over them, the Germans possess innumerable special high-angle guns. We have nick-named their projectiles "green shells," because of the little clouds of green smoke which they produce; but we have no fear for them, although the German guns have on occasion fired some 500 shells at one machine, they have not succeeded in bringing down a single French pilot.

* * *

The "Times" correspondent in Northern France reports:—The enemy have made an unexpected attack on Amiens by aeroplanes. On Wednesday last they dropped a large number of bombs on the town. Their first objective was the gas works in the rue Bruno d'Agny. The bomb fell on a brick wall

and burst with great force. The bullets struck the gasometer and penetrated at 30 different points. The gas caught fire and a jet of flame shot out at each of the 30 holes. The fire brigade were summoned and, working at great personal risk, under water projected by the hose, they succeeded in extinguishing the flames and stopping up the holes. It was feared that the gasometer would explode, but this catastrophe was averted.

In another quarter of the town a workman was killed and another had two legs broken. A third bomb fell in a stable yard where a number of horses were being groomed. Fifteen of the horses were killed and one was wounded. Happily the men who were attending to them were unhurt.

* * *

It is reported in the "Express" that two French soldiers and an aviator, all captured at Maubeuge, have escaped from the German camp at Friedrichswesl, where they were prisoners. By burrowing in the ground they contrived to get clear of a double fence of barbed wire. They then managed to procure civilian clothes, and made their way to Rotterdam, whence they sailed for Havre.

* * *

A correspondent of the "Temps" says on November 23rd that three British wounded in an ambulance at Bailleul have been killed by a bomb dropped from a German aeroplane.

Another German aviator has thrown five bombs on Hazebrouck, killing a chauffeur.

* * *

The new French aeroplane bombs have been proved a wonderful success. One was tested on the sands in Northern France. It blew a hole in the beach 15 feet deep and about 27 feet in diameter. Those who seated themselves some hundreds of metres away to watch were blown over.

* * *

Inhabitants of Soissons who arrived in Paris on Saturday evening related to a representative of the "Petit Parisien" that about 10 a.m. a Taube flew over Soissons to discover the French batteries. A British aviator immediately attacked it. The Taube had its motor broken by shrapnel. It tried to return to the enemy's lines by a vol-plane, but a 75-millimetre shell upset it, and the enemy aeroplane fell into Soissons. It was occupied by a mechanic and two officers, who were picked up burned to death.

[*Reuter*, who is responsible for this story, is very fond of these three-seater German machines, though one never hears of them elsewhere.—Ed.]

* * *

Mr. H. Cozens-Hardy, of the "Daily News," reports from Paris on Sunday that a Hanoverian prisoner captured near Dixmude declares that the German officers fear the aeroplanes of the Allies—not only because of the bombs, but also because of the London and Paris newspapers they drop. The German soldier is shot if a French or English newspaper is found in his possession.

* * *

The "Daily Mail" special correspondent, North of France, Saturday 21st, reports:—"It was victory all along the lines of the — Division, who now occupy the German positions. Throughout this fighting the Germans were using an old stationary Zeppelin to ascertain the position of the British troops, and at times it was distant only 800 yards. But orders were given not to fire upon it—a wise precaution, as it would have disclosed the position of the troops to the enemy."

[It is possible that the "Daily Mail's" correspondent has never seen one of Germany's new rotary Zeppelins, but he has certainly seen a Parseval-Siegsfeld kite-balloon.—Ed.]

The "Daily Chronicle" special correspondent in Northern France reports:—"I also heard from the same prisoner, who had been a mechanic attached to the Flying Corps, that there are only one or two Taube aeroplanes left, and that the principal machine now used is the 'Aviatik' biplane, which has an armoured prow fitted with a machine-gun. The manufacture of the Taube type has been stopped, as the machines have been far from satisfactory."

GERMANY.

The German war news issued by wireless on Saturday contained the following:—It is reported from Friedrichshafen

that two English aviators made an attack upon the Zeppelin sheds from a height of 400 metres. One who was shot down proved to be a British naval officer. Five bombs in all were thrown in the neighbourhood of the sheds, and two houses were damaged and one man killed and two women seriously injured. The sheds, however, were undamaged.

The "Kölnische Zeitung" learned from Zurich that the number of aviators flying over Friedrichshafen on Saturday is differently given as three and six. At 2 p.m. again two aviators from the direction of Sundgau flew over Basle. They appear to have followed the Rhine and to have flown over Switzerland.

According to a telegram from Geneva, three aeroplanes attacked the Zeppelin shed at Friedrichshafen. The machines were seen at 12.30 p.m. at Basle coming from the direction of Sundgau, in Upper Alsace, flying at a very great height. They then followed the Rhine and were above Friedrichshafen at 12.50 p.m. From the Swiss shore violent cannonading was heard in the direction of Friedrichshafen, and a shell was seen bursting above the lake.

* * *

The following communiqué was issued on November 19th from the Great Headquarters in Berlin:—

"A German flying squadron, while reconnoitring, forced two hostile aeroplanes to descend and destroyed another. One of our aeroplanes is missing."

The following story appeared in several papers on the 20th and 21st:—"The German communiqué for the first time since the beginning of the war mentions the air squadron.

"Germany has worked hard in the construction of enormous numbers of aeroplanes, and it is stated that in August in a few days' time 10,000 aviator pupils enrolled themselves."

The story comes from the Amsterdam correspondent of the Central News Agency. It should be carefully noted that though skilfully placed together the two paragraphs have nothing to do with one another. The German communiqué appears elsewhere. The second paragraph is an absurd rumour of the type which has lately become one of the staple exports of Holland, via our so-called "News Agencies." The art of flying (on foot) may be of high value to more than 10,000 German troops ere long, but at present even Germany, with her enlightened direction of military aeronautics, her vast resources and splendid organisation, could scarcely tackle the training of 10,000 aviators.

* * *

The Geneva correspondent of the "Temps" says that, according to the "Nouvelle Gazette" of Zurich, the Zeppelin workshops at Friedrichshafen are working night and day, turning out one new Zeppelin every week.

There are now more than 40 of these airships ready for use. Special factories are constructing and sending to Friedrichshafen motors, platforms, and envelopes. The envelope of the new model airships is made of aluminium. The platform is mounted on top, and guns placed on it for enemy aeroplanes.

Beneath the cars is suspended from a cable a small balloon, from which torpedo-shaped bombs, loaded with explosives

similar to those of the 17in. howitzer shells, can be dropped by a single man. The new Zeppelins, it is said, can carry 30 or 40 of these bombs.

[This story is translated by the "Exchange" Co., and possibly contains errors imported in translation. The figure 40 is evidently arrived at by estimating that Zeppelin No. 40 has probably been ordered by now. It will be remembered that only 10, out of 26 built up to the end of last year, were fit for use when war broke out, and that No. 31 was said to be delivered a week or so ago. Probably 9 more are on order. Hence 40. "One a week" is absurd. The 17in. howitzer bombs weigh, it is said, 1,600 lbs.—30 would weigh 21 tons or about 19 tons more than a Zeppelin can lift.—Ed.]

German West Africa.

It is reported from Luederitz Bay, German West Africa, that a German aeroplane has been over the British positions.

BELGIUM.

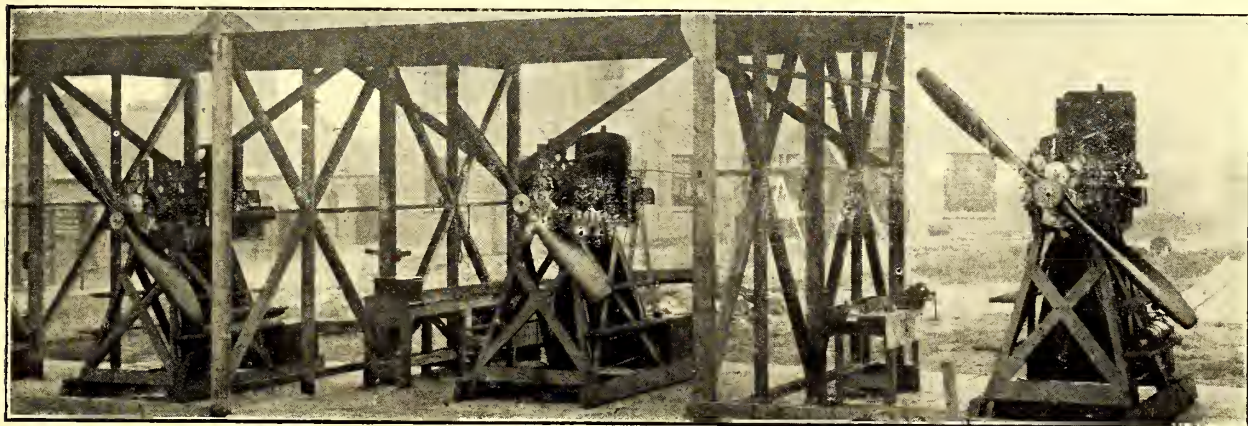
The "Telegraaf" learned from Sluis on November 18th that several explosions had been heard. It was rumoured that they were caused by British aviators dropping bombs which demolished a factory at Zeebrugge.

In the fighting in Flanders the armoured cars of the Royal Naval Air Service were reported to have brought down on November 18th five German captive balloons.

The "Daily Chronicle" special correspondent in Northern France, Mr. T. E. Elias, writing on November 20th, tells the following story, which is, at any rate, graphic:—"... The wind dropped, and within a short time aeroplanes began to dot the sky. The Germans were first into their machines. Four 'Taubes' approached the Allied lines at a great height, and were soon opposed by two French and two English machines. A thrilling battle ensued. The eight pilots approached, then swept around in circles. For ten minutes evolutions continued, whilst the eyes of all the fighting men of both armies below were centred on them. Mitrailleuses crackled in all directions, but with no success. Suddenly the Allied aeroplanes fled from the fight. They flew in parallel lines one over the other, and the Germans pursued them at a tremendous speed. Too late the pursuers realised their danger. Literally a shower of shells from some hidden French batteries exploded round them. They had been enticed into a trap. Within another five minutes all four enemy machines were shattered. They fell in front of the English lines. Their officers and pilots—eight men—were killed instantly. Our own machines then volplaned to the ground, having accomplished their work with as much skill as luck."

[Reading between the lines it looks rather as if the Allies' machines had been fairly beaten off by the superior power of the Germans, and were saved by their own artillery when running away. A preconcerted movement of this kind between French and British machines coming from different camps is hardly likely to have taken place. No one disputes the skill of our pilots in escaping from superior machines, but it appears that luck was the saving clause in this affair.—Ed.]

The following story from Paris (dated November 17th) re-



Three of the new 150-h.p. Sunbeam Engines under test at the firm's works at Wolverhampton.

lating to the attack on Ypres on November 11th, appeared in various London papers:—

"At 7 o'clock in the evening the British staff at Ypres were dining when they were informed that the enemy were advancing. . . . The Allied troops reached the plain of Zonnebeke before the German guns had taken up positions, and began shelling the enemy. As the latter gave no answer, the British general thought he had been misinformed or the Germans had altered the direction of their advance. He sent a wireless message to Ypres ordering aeroplanes to leave Ypres and direct their searchlights upon the plain. The searchlight revealed the presence 250 yards south of Xonnebeke of the German army, which was advancing on the British lines. The enemy had been informed of the Allies' movement and, while the latter expected them from the north, they were preparing to attack by the south, thus hoping to create confusion in the ranks of the Allies.

"One aeroplane directed its searchlight upon the enemy's advanced guard and discovered the Prussian Guard at a distance of 130 yards from the British lines."

[This story of an aeroplane with a searchlight of sufficient power to discover a German "army" comes from Reuter, which rather spoils one's belief in it.—Ed.]

HOLLAND

The Hague newspaper "Het Vaderland" reported on November 18th that two German naval officers who landed some time ago with a biplane on a Dutch island north of the Province of Groningen have made their escape—although on parole—from the camp at Bergen, near Alkmaar, where they were interned.

[If this story be true the conduct of these officers is unworthy of the traditions of the German Navy, which our own Service holds in high respect. A report from Germany says they are to be tried by a court of honour.—Ed.]

"L'Information" (Paris) of November 17th had the following despatch from Rotterdam: "A Zeppelin, driven before the tempest, passed above Maastricht yesterday afternoon. It was in an almost vertical position, and its crew were clinging to the cordage. The dirigible fell near the German frontier, and was completely destroyed."

Another version of the incident is given in the following telegram from the "Telegraph's" special correspondent at Rotterdam:—

"One of Germany's airships narrowly escaped being interned in Holland on Sunday. A Maastricht message to the "Nieuwe Rotterdamsche Courant" states that a dirigible was seen in that district in great difficulties. It came so low that the trailing cable seemed to touch the ground, but the crew succeeded in getting the motors to work again, and, rising to a height of 300 metres, the airship escaped across the German border.

The "Chronicle" remarked on November 18th:—"A Zeppelin is reported to have been completely wrecked in a storm near Maastricht, in Holland, near the German frontier. The futility of this vast and expensive craft is one of the side-features of the war." If this is the "Chronicle's" opinion, then why does it publish the News Agencies' scare stories about innumerable powerful Zeppelins without comment?

RUSSIA.

The "Times" correspondent in Russia wrote from Warsaw, under date October 25th, as follows:—

"There is the most intense indignation here among all classes at the action of the Germans in this respect (bomb dropping). Warsaw cannot fairly be considered a fortified city, and during the fighting practically every available soldier was rushed forward to the firing line. Yet for days the aircraft of the Teutons sailed over the city, dropping their infernal machines absolutely without regard to who was killed or what was destroyed in their irresponsible career. The first ones dropped pamphlets printed in Polish, in which the citizens were politely informed that they need not be alarmed, as the bombs were intended merely for use against the soldiers and to destroy public buildings. They were advised to stay within doors while this programme was in progress. After this reassuring announcement came other airmen, who proceeded to drop bombs quite at random.

"I learn that 32 bombs were dropped, and the number of killed is given as 14, while from 20 to 30 persons were wounded. It is interesting to note that not one of this number was a soldier or an official, and that of the property destroyed, which was small, none was official. The casualty list is composed of men, women, and children, all absolutely innocent and having nothing whatever to do with the war. One bomb fell within a few hundred yards of the American Consulate and just opposite the Hotel Polonia. Neither of these buildings has the slightest resemblance to a public institution, and the occupants of both were indignant at what is regarded here as an outrage. One of the aeroplanes was winged by the Russian soldiers and fell into the street. Of the two men in it one was killed, while the other, it is said, blew out his brains rather than submit to capture.

[One wishes that journalists would not write rot, or that editors of responsible journals would edit them. Warsaw is shown in all maps as a fortress, and is therefore bombardable—apart from expediency, which wipes out all laws. The courtesy of the Germans in advising inhabitants to stay indoors is a noteworthy act and quite humane. Those who afterwards went out and were hurt had only themselves to blame. One would imagine that this journalist thought bomb-dropping to be as accurate a game as billiards.—Ed.]

TURKEY.

While off the Dardanelles the British ships on patrol duty there were reconnoitred by a Nieuport hydro-monoplane, which appeared several times. It was obviously a Turkish craft, but it was not fired at as the nationality was not absolutely certain.

It occurs to one that a few really big bomb-dropping sea-planes might be quite useful at this point to give attention to the Dardanelles forts.

EGYPT.

At this stage in the world's history aviation and war are synonymous. A charming lady reader of THE AEROPLANE, writing under the shadow of the Pyramids, narrates how rumours of aeroplanes permeate even in Egypt the indigenous war rumours. For instance, it was reported recently by Bedouins that an aeroplane had been seen off the coast of Koser. Struck with the importance of what they had seen, the Bedouins wired (!) to the local magnate, whose seat of office was distant from the informers four days' journey by camel. The worthy magnate, without loss of time, communicated the intelligence to the powers that be in Cairo, adding "that his second in command had already left by camel for Koser in order to draw up the necessary 'procès verbal.'"

The same lady says that M. Jules Védérines has offered the Blériot which he flew at Heliopolis to General Maxwell for use in Egypt—the number of "procès verbaux" this offer is likely to engender is indeterminate.

Further, Doctor Freund's monoplane, which he has been experimenting with, is still here, but it is rumoured that when he went on leave he was arrested on landing in England and is a prisoner. He owned to being a German officer, and it was generally thought that he was an American here. His clients with long-standing bills for molar extractions are feeling awfully "bucked."

Another correspondent sends a thrilling paragraph from the "Egyptian Mail" of November 3rd, which reads:—

"Report from an eye-witness attached to the Headquarters of the British troops in France.

"Sometimes the enemy provides amusement unassisted. For instance, the other day British troops lying at a point between Alsace and the Atlantic saw two Zeppelins destroy each other with incendiary bombs. Each, unknown to the other, had disguised itself as British for purposes of spying. They opened fire on each other simultaneously, and the upshot was that both were involved in a common catastrophe. Prisoners afterwards told us that even the Germans had been unable to repress their mirth at this ludicrous contretemps."

[Surely the "eye-witness" who narrated the Zeppelin incident must have had his visual organs somewhat out of line. It is, however, to be noted that the "report" is credited at the end to "J. C. S. in the 'New Statesman'"—who is not, presumably, the official "Eye-Witness."—Ed.]

A Mean Slander.

In accordance with the wishes of several friends of the late Mr. Gustav Hamel, I desire to refer to a particularly mean slander on his memory which would need no attention but for the pain it causes to those who are still alive.

On various occasions since the outbreak of war I have been asked by letter and by telephone whether there was any truth in a rumour that Gustav Hamel is alive and "commanding"—no less—the German flying corps, and that he was acting in German interests—was in fact a spy—while in this country. Those of us who knew and liked poor Gustav, for one did like him despite his faults, can afford to ignore such malicious attacks on our dead friend, but I learn that letters of an offensive nature have reached his relatives, and so I would ask any reader who meets this rumour to deal as effectively as circumstances permit with the person circulating it.

To begin with, Dr. Hamel was born in Schleswig, and is therefore a Dane, and not of German origin, though a German citizen by the conquest of 1864. Gustav was born in London and was educated at Westminster School, and was therefore quite English by birth, education, and sympathy.

Secondly, his body was picked up by fishermen, and the contents of the pockets of the clothes were identified by his intimate friends as being his. The description of the clothes given by the fishermen tallied with those he was wearing when he started. The body was not brought ashore because what was left was not worth bringing—one need not be more specific.

Thirdly, we who knew poor little Gustav well know that if by some extraordinary chance there had been a mistake about the body, the first thing he would have done on becoming able to do so, would have been to come back to this country. As to his being a spy, his was far too simple and childlike a nature to have been capable of such work, even if he had wished, an idea which to us is equally impossible.—C. G. G.

Congratulations.

On Saturday, November 14th, a marriage took place between Mr. W. O. Manning, the well known aeroplane designer, and Miss Barbara Blanck, of Gunnersbury. Both Mr. and Mrs. Manning are among those who have been closely connected with aviation since its beginnings. Mr. Manning was originally Mr. Howard T. Wright's chief assistant in the days when Mr. Wright built such famous machines as those flown by the Hon. Alan Boyle, and by Mr. Sopwith when he won the de Forest prize and set up a world's cross-country record. Later Mr. Manning went to the Coventry Ordnance Works with Mr. Howard Wright and has just left that firm. Whatever his new appointment may be, one may rest assured that his great ability and long experience will be of high value.

In those early days of 1911 and 1912 Miss Blanck was a frequent visitor to Brooklands and did a good deal of flying as a passenger. Needless to say everyone concerned with aviation will wish Mr. and Mrs. Manning every happiness and prosperity.

The New School on Windermere.

The Northern Aircraft Company, Ltd., as announced recently, have now started in earnest on the establishment of a practical flying school on Windermere, and already have four machines in use.

There is the original pusher type monoplane, built by Mr. Gnosspelius and Mr. Sayers to Mr. Wakefield's designs, the Curtiss type waterplane with 50-h.p. Gnome, which did so much flying as the property of the Lakes Flying Co.; a 50-h.p. Avro biplane rebuilt by the Lakes Flying Co., and a Blériot monoplane, strengthened and adapted for waterplane flying, and fitted with a 45-h.p. Humber engine, which has been altered and improved by the staff of the Northern Aircraft Co.

The firm possesses, at present, three sheds, one of very large size which is to be converted into a works. Applications have already been received from certificated pilots who are anxious to continue their practice on waterplanes, a sound scheme for those who are anxious to join the Royal Naval Air Service.

Thanks to Readers.

Miss A. F. Taylor wishes to tender her grateful thanks to those who have so generously responded to her appeal for copies of *THE AEROPLANE* for the troops. Too many can hardly be sent, as more and more institutes are to be opened as more men arrive, and a number of wounded soldiers also are now in the town. Where possible, she has acknowledged the papers directly, but to those who did not send addresses, she now expresses her thanks:—W. J. H. E., and readers at Chinley, Heysham, Worthing, Sutton, and several places of which the postmark was illegible. Notice will be given in this journal as soon as the papers are no longer needed. Address, 26, Bold Street, Southport.

Signs of the Times.

Some idea of the activity ruling in the aviation business may be gained from the accompanying photograph of a consignment of raw material for the manufacture of Emallite dope.

It is the fifth consignment brought over by the company from the Emallite headquarters in Paris by the company's representatives personally, and indicates the driving force which exists at 30, Regent Street, in this time of stress. On the occasion of the third visit of one of the company's representatives to Paris, the German forces had then reached their nearest point to the French capital, and "Taubes" were dropping bombs near the Emallite works as the material was leaving for London, yet two days later the goods had been delivered at the Shepherd's Bush Works.

The following letter has been received from the British Emallite Co., Ltd.:

"In view of the grossly inaccurate reports in circulation regarding the directorate of this company, we are compelled to draw attention to the following facts:—

1. That none of the directors are of German, Austrian, Hungarian, or Turkish nationality.
2. That with the exception of the holder of one ordinary £1 share, none of the shareholders in this company are of German, Austrian, Hungarian, or Turkish nationality."



A Supply of Raw Material from France arriving at the works of the British Emallite Co., Ltd.

Schools at Work—IV.

At an age when the ideas of most young men with money do not soar above owning a very fast motor-car and being a general nuisance on the road, Mr. J. Lawrence Hall took it into his head to learn to fly, and thereafter started the Hall School of Flying at Hendon.

Possibly Mr. Hall passed the motor-car stage in his very early youth and, finding no more roads to conquer, took to the air as the only way of attaining still greater speeds; at any rate he taught himself to fly. Perhaps he learned a trifle too quickly, for his earliest efforts were marked more by pluck and daring than by skill and address. As a result he had one or two nasty tumbles, from which he happily emerged without serious personal damage, though his machines have been, as the French say, a little deteriorated. However, bad beginners frequently make fine finishers, and there are in the Royal Flying Corps several very fine pilots who seemed perfectly hopeless as pupils—one in particular, I remember, who mistook his face for a landing skid on one occasion, is now a magnificent flier.

In a similar way, presumably, Mr. Hall has of late developed into a steady, careful pilot who has for months been remarkably free from even minor accidents, and has managed to execute with success perfect landings under circumstances wherein even the best pilots need not have been ashamed of damaging their machines. That being so, he is certainly suitably equipped by experience to instruct others in aviation.

When he started his school Mr. Hall had the idea of giving his pupils experience on various types of machines, and acquired for the purpose an Avro, a Blériot or two, a Caudron, and a Deperdussin—the ABC and D of aviation. However, when war broke out the Admiralty commandeered his Avro, and the Blériots and Deperdussins died natural deaths in the hands of too-enthusiastic pupils, so he has now decided to stick to tractor biplanes of the Caudron type—a wise choice, for, as has often been observed, the Caudron is about the safest type on which a pupil can learn single-handed, and progress therefrom to faster tractors is a natural progression.

At present Mr. Hall has three Caudrons in hand for school use. One with a 35-h.p. Anzani is now at work, another with a 30-h.p. Anzani, for elementary instruction, was almost ready when I visited the school recently, and the third, which is to have a 45-h.p. 6-cylinder Anzani, should be fit to fly by about the time these notes appear. Therefore there should be no dearth of machines for the pupils at present on the books.

The equipment of the school with more machines, with more powerful engines, is simply a matter of an increase in the number of pupils. If more pupils join on their own accounts, or if either of the Services care to support the school by sending pupils there, Mr. Hall tells me he is prepared to provide a suitable number of machines which, in the latter case, would of course be submitted to official inspection.

In view of the importance of the aeronautical services in this war one hopes to see such enterprise encouraged, for we cannot have too many Naval or Military aviators, and for that reason we cannot have too many schools, especially when, as in this case, a school is run by one who is at once an experienced flier, a trained engineer, and a man with the command of sufficient money to equip his school in accordance with Service requirements if he can be sure that such expenditure will be utilised for the good of the Services.

In the meantime civilian pupils can be signed on, and one feels sure that Mr. Hall is prepared to give them any guarantee they may require that they will receive value for their money.—C. G. G.

The Sussex County Aero Club.

Saturday last was the first Divisional day of the Sports for Kitchener's Army organised by this Club, and fine weather brought a good crowd. The prize fund to date amounts to £132 and £200 is required.

The Committee appeal to the members to get further members for the Club, as the more members there are, the larger the funds at their disposal to enable the Committee to assist in the work which they have in hand.

They have been asked to undertake a further work, namely, the building of rifle ranges, particularly for the Home Defence Brigades, as the existing ones in the locality appear to be full up.

Next Saturday will witness the Championship contests and distribution of prizes by Lady Ramsay.—W. C. LITTLEWOOD, Secretary.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ..	Windy	Fair	Fair	Wet & Misty	Fine	ind	Gale
South Coast...	Cold Fog	Rain Windy	Dull Fine	Fine C. Id	Fine Cold	indy Cold	Gale
East Coast ...	Wind & Rain	Wind	Windy	Rain & Snow	Wind & Rain	Windy	Half a Gale

Eastbourne.—AT E.A.C. SCHOOL.—Instructors: Messrs. F. B. Fowler and R. C. Hardstaff. Pupils: Flt. Sub-Lieuts. Pullin (35 mins.), Barnes (42), Travers (34), Teesdale (40). 8's and circs.: Flt. Sub-Lieut. Iron (26 min.), and Mr. Bass-Sutton. Flt. Sub-Lieut. Iron completed certificate tests. Mr. Bass-Sutton passed tests A and B. Machines: E.A.C. biplanes.

Hendon.—AT GRAHAME-WHITE SCHOOL.—Instructors: Messrs. Manton, Russell, Shepherd, and Winter. Pupils with instr.: Prob. Flt. Sub-Lieuts. Cooper, Dalison, Field, Driscoll, Barnes, Breese, Livock, Wakeley, Watson, Young, and Mr. Greenwood. Straights alone: Prob. Flt. Sub-Lieuts. Groves, Hod-soll, Bray, Cooper, Watson, and Price. Figures of 8 or circs. alone: Prob. Flt. Sub-Lieuts. Groves, Bray, Hod-soll, and Mr. F. Carabajal. Certificate taken during week by Mr. F. Carabajal. Machines: Grahame-White biplanes.

AT THE BRITISH CAUDRON SCHOOL.—Instructor: Mr. R. Desoutter. Pupils: Prob. Flt. Sub-Lieut. Bird very good straights, Mr. Williams rolling well, Messrs. Barfield and Stevens right and left-hand half circs. in good style. Machines: Two 35-h.p. Caudron tractor biplanes. A half hour's test flight by R. Desoutter on a 60-h.p. two-seater Caudron biplane, preliminary to handing it over to the Admiralty.

AT THE HALL FLYING SCHOOL.—Instructors: Messrs. J. L. Hall and J. Rose. Pupils: Lieut. Sandys (10 strts.), Mr. Mitchell (4), and W. G. M. Connochie (14). Machines: Three Hall tractor biplanes.

AT THE LONDON AND PROVINCIAL AVIATION Co.'s SCHOOL.—Instructors: Messrs. W. T. Warren and M. G. Smiles. Pupils: Strt. or rolls: Messrs. Moore, Abel, England, Derwin, and White. Machines: L. and P. biplanes.

AT THE BEATTY SCHOOL.—Instructors: Messrs. Geo. W. Beatty and W. Roche-Kelly. Pupils with instr.: Messrs. Virgilio (45 mins.), Gardner (10), Loyang (5), Parker (12), Whitehead (5), Fletcher (15), Leeston-Smith (25), Moore (45), Newberry (10), Anstey Chave (35), Donald (30), Wainwright (38). Straights and rolling alone: Messrs. G. Perrot (10) and Cornish (45). Machines: "Dual" controlled 50-h.p. Gnome biplane and 40-h.p. Wright biplane.

Shoreham.—AT THE PASHLEY BROS. AND HALE SCHOOL.—Instructors Messrs. E. and C. Pashley and B. F. Hale. Pupils with instr.: J. Morrison, J. Sibly, G. Charley, and A. Goodwin. 8's and circs.: Messrs. J. Woodhouse, C. Winchester, and T. Cole. Machines: Pashley and H. Farman.

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WEDNESDAY, DECEMBER 2, 1914.

No. 23

ON GUARD.



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Anti-Aircraft Defence.

The recent raids by Naval aviators on Friedrichshafen, Düsseldorf, and Cologne, and the German promises of retaliatory raids on this country with Zeppelins and aeroplanes, naturally turn one's thoughts in the direction of anti-aircraft operations generally. A good deal has already been written on the subject, and quite the best article was one which appeared in the "Daily Express" and purported to have for its author a member of the crew of an anti-aircraft pom-pom, writing from H.M.S. "Flatroof." How that article escaped from the Censor passeth human understanding, for if ever anything tended to destroy confidence in the administration the supreme jest of regarding that pom-pom crew as a serious part of the defence scheme of our island home did so, but perhaps as it only threw ridicule on a section of the Navy, and not on our political lords and masters, it did not come under the heading of dangerous literature. Or, perhaps, it fell into the hands of an acting-sub-assistant deputy Censor with a sense of humour who saw that it might do good if it was brought to the notice of the right people.

Anyhow, the author is to be congratulated on one of the most genuinely funny pieces of writing and one of the most scathing pieces of satire the war has produced. Briefly the article shows the futility of putting a crew of willing defenders of their country on top of a flat roof in charge of a gun whose mechanism they do not understand, without any opportunity of practice with guns of similar type, and with orders not to fire unless they see a hostile aircraft. Most of them apparently have never seen an aircraft of any kind at sufficiently close quarters to be able to tell friend from foe, and if they could distinguish between them the friend would stand as much chance of being hit as the foe if they were both in the air at the same time and half a mile apart, owing to the unfamiliarity of the crew with their own particular toy.

The Pom-Pom at Home.

The pom-pom is quite a nice gun, and many soldiers have been puzzled as to why it has been so neglected ever since the South African war. True, the specimens which were used there had all the vices of the Maxim plus a few of their own, but a machine which will pump one pound shells in a solid stream has always seemed worth developing and perfecting.

Precisely the philosophy which permits one to plug one's fellow-man with a small shell and makes it immoral to do so with an explosive bullet, which is merely the same thing on a smaller scale, is a trifle hard to digest. Probably the theory is that the shell is bound to kill, while the explosive bullet only makes a mess and causes unnecessary suffering. In practice, if a man were hit in limb or body by either the chances are that the result would be about the same. The explosive bullet would probably kill, and there is a chance that the shell might only mangle and not kill.

In firing at aircraft the wish of the man behind the gun is to bring the machine down, and though possibly some men may have a lurking desire merely to put the engine out of action, or to wound the pilot slightly, and so compel an innocuous descent, it seems

quite likely that from a professional gunner's point of view there would be more satisfaction in seeing the whole thing crumple up and come down in a heap, especially if the particular gunner happened to be one of those officers who regard all bomb-dropping aviators as savages only fit for extermination—and judging from unnumbered letters which have been published of late this point of view is not uncommon. The pure professional satisfaction of a direct smashing hit is also fairly common, as may have been seen from letters written by Naval officers and men who have watched the sinking of German ships by our guns—and the average sailor is the kindest of men.

But, so far as pom-poms are concerned they appear to be about the most unsuitable weapons for anti-aircraft work. In the first place, that which goes into the air has to come down again, and even a rifle or shrapnel bullet is not a pleasant thing to receive on one's anatomy from a height of a few thousand feet. A big shrapnel splinter is still less pleasant, but it is not likely to hurt more than one person. Unexploded pom-pom shells, on the other hand, would probably burst on hitting the ground and do much damage if several people happened to be near them. Also such a shell is liable to burst inside buildings, say on penetrating a sky-light or a thin roof, and cause fires, so that altogether any one belt of pom-pom is likely to do more damage on the ground than in the air, and when all the ground happens to be friendly country it seems a trifle strange to bombard it broadcast on the extreme off-chance of hitting an aircraft.

The Pom-Pom Abroad.

Of course, where one can fire in the general direction of hostile territory the case is different, for the shells—about 99.9 per cent.—which miss the aeroplane have a sporting chance of alighting on an enemy of some kind, though even then, when the fighting line is as irregular as is that on the Continent, one's shells may easily drop into an advanced portion of one's own territory, and an enthusiastic gunner swivelling his pom-pom round to follow the course of an aeroplane may easily forget just what is for him the limiting point of the compass, and lob a few shells into his own lines—it is, in fact, rumoured as a dark paragraph in our history that one dear old general has already been seriously annoyed by a British pom-pom shell landing between his feet, happily without bursting, while others sprinkled the immediate neighbourhood.

As an off-set to this there is a persistent report that one persevering young Garrison Gunner, who was allowed to operate a pom-pom on the circum-ambient ether whenever a Boche appeared overhead, actually brought down a German biplane not long ago. The story goes that the shell scored a direct hit on the pilot, without exploding, and though he was killed on the spot the machine managed to get down without killing the observer also. Still one doubts whether the total bag was value for the amount of ammunition expended.

The paucity of gunner officers available for reference in this neighbourhood at the moment makes it impossible to dogmatise on the subject, but it occurs to

one that it ought to be possible to produce a pom-pom shell which is a combination of time-fuse and contact high-explosive shell, so that it would burst if it hit a hard part of the machine, such as the engine or control gear, and would in any case burst on reaching a certain height and return to earth in small pieces.

It appears that there is considerable difficulty in producing percussion mechanism sufficiently delicate to explode a shell if it hits anything soft, such as wing fabric, or an airship envelope, or the human frame, and yet stable enough to stand the shock of discharge, but if such a shell could be produced in combination with a time-fuse it would seem to be the ideal projectile against aircraft of all sorts. It is quite possible that ammunition of this sort may have been evolved already. If it has, so much the better, but if not, ordinary percussion ammunition seems rather worse than useless.

Armament for H.M.S. "Flatroof."

In view of the fact that most of the aeroplanes which have been brought down have been hit by rifle or machine-gun fire—both by the Germans and by the Allies—it strikes one that the ordinary small machine-gun is the best weapon for the volunteer crews of H.M.S. "Flatroof." Arguing from the use of the pom-pom there seems no bar to the use of explosive bullets, for whereas an ordinary bullet hitting a propeller does hardly any harm an explosive bullet would smash it, and would be equally effective in a petrol tank, an engine, or a wing-strut.

Such armament should be supplemented by a sufficient number of our new high-angle guns, manned exclusively by the most highly trained Naval gunners. The success of the French "soixante-quinze" against the Zeppelin at Badonvillers shows what good shooting with shrapnel can do against airships, and though, so far as one can learn at present, few aeroplanes have been brought down by shrapnel, it is always worth while having a try with it.

Incidentally one gathers that the shooting of the German "Archibalds" is getting a great deal too good to be pleasant, and that some of their shells have actually hit machines of the Allies, though always, fortunately, without bursting near enough to them to do serious damage. One cannot help being fascinated by the description of the officer quoted in the Military Notes who says that a shell bursting in one's vicinity sounds like a sneeze, and that if it sounds as a bang it is "damned close."

It is to be hoped that the gunners in charge of our London defence guns are given opportunities for practice at kites or captive balloons which will make their shooting better than that of the German anti-aircraft field guns if the promised aerial raid really takes place. Presumably the good people of London will have no objection to a hail of shrapnel and rifle bullets which have been intended for hostile aircraft, if some of the invaders are brought down, but it would certainly be annoying if a considerable amount of damage was done by projectiles launched into the air by friends and foes alike, if through lack of practice the Anti-aircraft Defence Corps—or whatever its official name may be—failed to bag a single enemy.

Help from the River.

A useful auxiliary to the fixed-position guns for the defence of London would be a fleet of fairly fast motor boats of large size, each mounting a high-angle gun, and covered with a light roof of bullet-proof steel plate, sufficiently thick to protect the crew from falling shrapnel and rifle bullets. Operating on the Thames they would cover as big an area of clear sky as any gun on a roof, and their mobility might be very useful, in that though their speed would only be a third of that of an aeroplane or half that of an airship, they would be able to reach favourable positions up or down the river if the approach of hostile aircraft was

signalled from look-out stations at some distance. Such vessels may already exist, but if not their utility is worth considering.

Also, searchlights fitted on these boats would further confuse an enemy by blinding him and so masking the position of the river.

Fixed guns and these boats are, of course, useful either at night, when airships are most likely to come over, or by day when an aeroplane raid is always a possibility. In daylight, or on a clear moonlight night, our own fast aeroplanes can operate as well as can those of the enemy. The experiences of our Naval aviators at Düsseldorf, Cologne, and Friedrichshafen, as well as the comparative immunity of the military aviators of the Allies from casualties, despite their constant flying over the highly trained and practised anti-aircraft gunners of the German Army, all go to show that guns on the ground are not nearly so effective in repelling enemy aircraft as are defending aircraft. Consequently, in the event of a raid on London our own aircraft are obviously our best defence.

Defence in Fog.

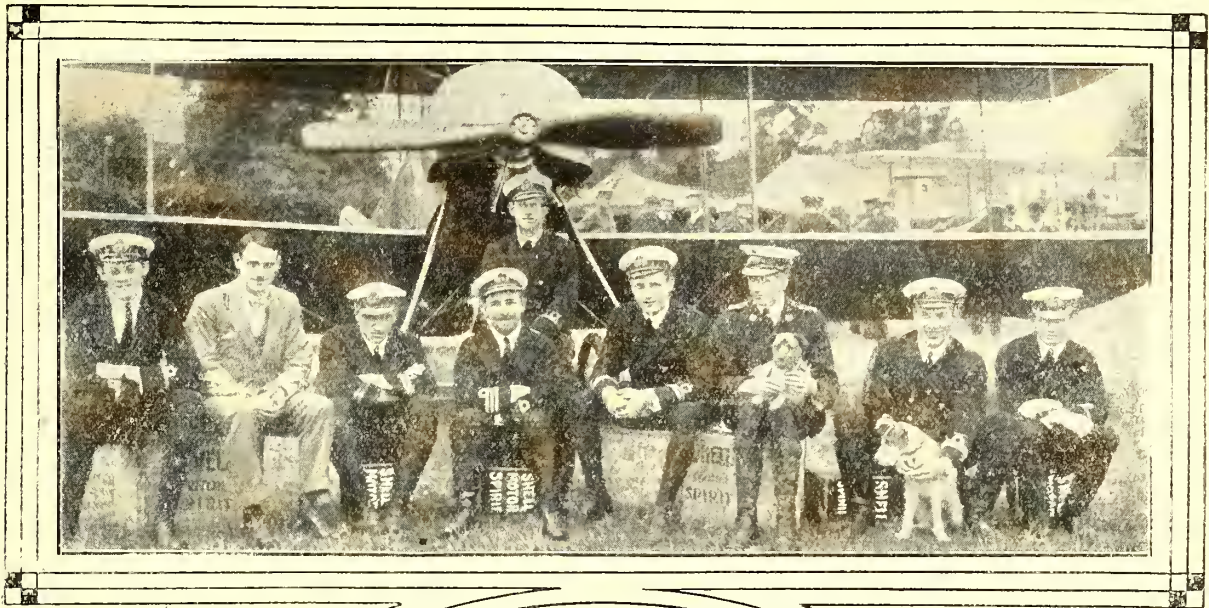
There are, however, occasions on which our aircraft cannot even begin to operate, as, for example, in a thick fog, which may be only a few hundred feet deep, and possibly quite local. It is no unusual thing for one aerodrome to be unusable owing to fog while school work is in full swing at another. A proper arrangement of direct telephones—to avoid the interminable delays and mistakes of the London telephone system—would make it possible to inform the pilots of the guard stations whether they could go up in a blinding fog at their own station with the certainty of finding clear air through which to land in some other known direction, though when once they were up in the air they would no doubt be able to see the clear patches for themselves. In this direction captive sentinel balloons with telephones to the ground would assist materially, for of course a thick fog which would make all these precautions necessary, would also mean calm air in which a captive balloon could be used with safety and comfort to its inmate.

Aerial Mine-Fields.

In the event of the fog being so dense and deep and extensive that the use of aeroplanes was quite impossible, the gunners on the ground would also be blinded, and the only possible protection would be air mines, such as have been proposed by various people in the past two years. At first sight the captive-balloon contact mine seems a most dangerous plaything, for it might hit something when being sent up or hauled down, and blow its crew to pieces, along with numerous interested spectators. It is, however, quite possible to produce for a few pounds a mine which only becomes alive after reaching a certain altitude, and becomes dead again on being hauled down, and it can be fitted with a check mechanism which is operated by clockwork and prevents it from becoming alive till it has been in the air for a given time, and causes it to go dead after a given time.

A matter of forty balloons to the mile would be enough to form a useful screen against airships, and a ten-mile mine-field would cover the approach even to London fairly effectively. A crew of four men ought to be able to look after a gang of ten balloons covering a quarter of a mile, for the balloons would need no attention when once in the air, which means sixteen men to the mile, or merely a balloon company of 160 men, and perhaps half a dozen officers, for the whole mine-field. Four hundred and fifty mines, allowing fifty for reserve, would not cost much, as war costs go, and the balloon company with their equipment of cars would operate as look-outs for aircraft on clear nights when the mine-field was not needed, so they would always earn their keep.

The mine-field could be shifted each time it was used, and the mere knowledge of its existence over



The
**achievements of
 British airmen**

in the present war have been so conspicuous as to call for special mention in despatches. In daring expeditions into the enemy's country, in reconnaissance work with the forces, their services have been of immense value. The illustration above depicts a section of the Royal Naval Flying Corps and a supply of

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which is being sent to the front for the exclusive use of the Allies in every branch of military service.

Insist upon having "Shell," the
 motor spirit the Allies use.

some unknown area should act as a useful deterrent to German airships which might come blundering across in calm winter weather and find themselves in fog over a place which their dead-reckoning told them was London, though they could not locate their exact position.

A mine-field at sea is intended and acts quite as much as a deterrent as an active agent of destruction, and there seems no practical reason why aerial mine-fields should not serve an equally good purpose.

Further, even if an airship missed hitting a mine direct, and merely entangled its propellers or control planes in the wire of one balloon, it would stand an

excellent chance of getting out of control and coming to grief in contact with another mine, and this end might be assisted by linking the balloons in gangs of five by wires from one to the other.

The scheme, if properly worked out, and operated by a reasonably intelligent and well-trained company of men, has much to recommend it, and need not be turned down in official quarters as the fad of a hare-brained inventor. At worst it is likely to be at least as useful as, and far less dangerous to its friends than, is the operation by untrained volunteers of numerous pom-poms firing standard ammunition.—C. G. G.

Merit will Out.

A feature of the Friedrichshafen raid which cannot be too much emphasised is the fact that not one of the three Avro biplanes used in it had ever flown before. They were assembled and carefully trued up and adjusted in the Avro Works in Manchester, and were then put into cases and shipped straight to the Eastern Frontier of France. It was impossible to make any test flights on them, as absolute secrecy was necessary so that spies should not give warning of their presence in that particular town. Consequently their first flight was straight away into Germany. Despite the jolting of the journey and the changes in atmosphere and temperature between Manchester and the French frontier—the whole of Eastern France being then under snow—the machines were in perfect truth, and the pilots had not the slightest trouble in flying them.

As an example of perfect construction this would be hard to beat, and it is a not less remarkable example of standardisation, for the truing up at Manchester had to be done on the experiences with earlier machines and on the assumption—which was justified—that all Avros of this type are exactly alike.

When one recollects the amount of adjusting and tuning it takes to get the average B.E. to fly correctly after it has been turned out as correct according to specification, one begins to see the difference between R.A.F. and Avro standardisation. Apparently the latest R.A.F. designs will not go together at all though built exactly to innumerable drawings, whereas Avros built in Manchester can be put together in France without any drawings at all, and fly perfectly.

Which is not without its humorous side when one considers that in the days when the R.A.F. controlled military aviation it condemned Avros as unfit to fly. The humour is intensified by the fact that the despised Avro is in high favour with the R.F.C. officers on active service, is standing up to exposure and hard use as well as any machine in the service, including the R.A.F.'s expensively built efforts, and is ten miles an hour faster than the best B.Es. with approximately the same horsepower. Hints of belief in the merits of the Avro may have been noticed in this paper from time to time in the past, and it is therefore somewhat pleasing to see one's faith justified. One feels that there should be in this country some equivalent to the French Legion of Honour, which could be conferred on non-combatants such as Mr. A. V. Roe, who have done such good work for their country.

Inherently Stable Aeroplanes.

The writer has recently been severely taken to task for criticising certain inherently stable machines now on order. It may, therefore, be well to explain that the criticisms were not directed against inherently stable machines as a class, but against inherently stable machines which are merely slower fliers and worse climbers than ordinarily controlled machines. In war, speed and climbing power are the most important considerations, provided always that the machine is otherwise safe to fly and land. Inherent stability which allows a pilot to let go his controls and use a rifle against a pursuer, while his passenger can use another rifle from the front seat, is of great value, but its value is seriously diminished if the machine is so slow that it cannot overtake or out-climb the average machine used by the enemy. And there is no reason what-

ever why such a machine should ever be ordered for military, or naval, purposes.

An inherently stable machine may be made to climb very rapidly by the simple process of fitting it with an engine which has too much power for the use of the machine when flying normally on a horizontal path. That is to say, if an inherently stable machine has a normal flying speed when flying horizontally of less than 70 m.p.h. and requires almost its full 70-h.p. to maintain that speed, it is useless in modern warfare. It should be fitted with an engine giving at least 90-h.p., and it would then be found to climb quite well. By keeping the machine down with the elevator and opening the engine up, its speed on a horizontal path would be materially increased, though while flying at this increased speed the machine would become unstable. It would certainly "hunt" badly, and would have to be controlled absolutely by the pilot.

There is everything in favour of the use of stable aeroplanes, and they are undoubtedly an immense advantage to pilots who have to cover long distances, but an inherently stable machine which uses very nearly all its power when flying horizontally or when climbing slowly, is bound to be more a danger than a safeguard.

It may, it appears, be accepted as an axiom that an inherently stable machine can never be very highly efficient, and that what one gains in stability one loses in speed and climbing power. Such a machine can only acquire high speed and rapid climbing by being over-engined, which the stable machines known to us are very obviously not. On the other hand, an over-engined machine with a modern engine can always be throttled down so that it will fly at a more or less constant altitude without further attention.—C. G. G.

The R.N.A.S. Comforts Fund.

The following contributions were made during the week:—A. V. Roe and Co., Ltd. (directors and employees), £16 5s. 9d.; Mrs. Rubra, £2 2s.; the Cedric Lee Co., Ltd. (Staff), £1 10s.; White and Thompson, Ltd. (employees), £1 3s.; Mrs. Yeatman Biggs, £1; Mann and Grimmer, 4th donation (employees), 15s.; Vickers (Erith), Aero Mechanics' 7th donation, 13s. 3d.; Mrs. A. Reynolds, 10s.; total for the week, £23 19s.; grand total to date, £158 8s. 2d.

Mrs. Sueter also wishes to thank Mrs. Stanley White, of Bristol, for a parcel of shirts, and Mrs. and Miss Gnosspelius and Mrs. Groves for the many warm garments they have sent. Eleven cases of "woollies" have already been dispatched, and two more are to be sent during the week.

It is interesting to note that the employees of Vickers, Ltd., of Erith, and those of Mann and Grimmer, of Kingston, seem to be running a weekly race with their contributions. There are, however, many employees of big firms who have done nothing for the comfort of the R.N.A.S. so far, though the R.N.A.S. is in reality paying their wages, which are in almost every case higher than they would be earning in time of peace. Surely some of those who have given nothing can afford to do so. Moreover, those who have given only a shilling or sixpence in the last three months cannot feel that they have been generous. It must be remembered that every penny of the Fund is spent on the N.C.O.s and men. Nothing is wasted on expenses, and, of course, nothing is sent to the officers, many of whom quietly contribute to the Fund out of their own slender means.

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From the "London Gazette," November 24th, 1914.

ADMIRALTY, November 20th.

ROYAL NAVAL AIR SERVICE.—The following probationary flight sub-lieutenants have been confirmed in the rank of flight sub-lieutenant: Bernard Crossley-Meates. Dated August 14th, 1914. Ronald Portman Cannon (for temporary service), and Edwin Rowland Moon (for temporary service). Dated September 11th, 1914. Tom Harry England. Dated September 12th, 1914. Allan Knighton Robertson (for temporary service), and Rupert Ernest Penny (for temporary service). Dated September 30th, 1914. Edwin Harris Dunning (for temporary service). Dated October 4, 1914.

* * *

A Second Supplement to the "Gazette" of November 24th, published November 26th, contains the following military appointments:—

WAR OFFICE, November 26th.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—The undermentioned appointment is made: Wing Commander Major Edward B. Ashmore, M.V.O., Royal Artillery, from a General Staff officer, second grade, and to be temporary lieutenant-colonel. Dated November 18th, 1914.

SPECIAL RESERVE OF OFFICERS.—Royal Flying Corps (Military Wing).—The appointment of William L. Hardman to a second lieutenantcy, which appeared in the "Gazette" dated July 25th, 1913, is cancelled.

The undermentioned cadets and ex-cadets, Officers Training Corps, to be second lieutenants (on probation): Conrad Powell Johnstone, 3rd Battalion Highland Light Infantry. Dated September 25th, 1914. Reginald Stuart Chambers, 3rd Battalion Highland Light Infantry. Dated September 26th, 1914.

The undermentioned to be second lieutenant (on probation): Arthur Cornwallis Phillips, 4th Battalion, Scottish Rifles. Dated October 30th, 1914.

* * *

From the "London Gazette," November 27th, 1914.

ADMIRALTY, November 25th.

ROYAL NAVAL AIR SERVICE.—Temporary Second Lieutenant Brian Stuart Benning, Royal Marines, has been appointed flight sub-lieutenant. Dated November 16th, 1914.

* * *

A Fourth Supplement to the "Gazette" of November 27th, published November 30th, contains the following military appointment:—

WAR OFFICE, November 30th.

ESTABLISHMENTS.—Royal Flying Corps (Military Wing).—Lieut. Arthur B. Bagley, the Royal Dublin Fusiliers, to be a flying officer, and to be seconded. Dated November 17th, 1914.

NAVAL.

The following appointments were made at the Admiralty on November 26th:—

ROYAL NAVAL RESERVE.—Sub-Lieuts.—W. L. Welsh and H. J. Batchelor, to the "Pembroke III," for Royal Naval Air Service, as probationary flight sub-lieutenants, to date November 25th.

ROYAL NAVAL AIR SERVICE.—Messrs. O. Noel Walmsley and J. E. B. Maclean have been entered as probationary flight sub-lieutenants and appointed to the "Pembroke III," additional, for Royal Naval Air Service, with seniority November 23rd. Mr. J. D. Newberry has been entered as probationary flight sub-lieutenant for temporary service, to date November 23rd. Mr. J. W. Alcock has been entered as Acting Warrant Officer, second grade, and appointed to the "Pembroke III," additional, for Royal Naval Air Service, to date November 19th.

* * *

The following appointments were made at the Admiralty on November 27th:—

Lieutenant.—C. M. Murphy, transferred to Royal Naval Air Service as acting flight lieutenant, and appointed to the "Pembroke III," additional, for Royal Naval Air Service, to date November 20th.

ROYAL NAVAL AIR SERVICE.—Lieut.-Commander G. C.

Thomas, retired, to the "Pembroke," additional, for anti-aircraft duties, to date November 26th.

* * *

The following appointment was notified at the Admiralty on November 28th:—

Temporary Surgeon A. R. McMullen, to the "Pembroke III," additional, for Royal Naval Air Service, to date November 27th.

* * *

The following appointments were made at the Admiralty on November 30th:—

Royal Naval Air Service.—Temporary Second Lieut., R.M., B. S. Benning, to the "Pembroke," additional, for Royal Naval Air Service as Flight Sub-Lieutenant, to date November 16th. Mr. J. S. Mills, entered as probationary Flight Sub-Lieut., and appointed to the "Pembroke III.," for Royal Naval Air Service, to date November 27th.

* * *

The various reports of the capture of Squadron-Commander Briggs at Friedrichshafen differ considerably, but it is reasonable to assume that when his engine stopped and he let go his bombs, he made up his mind that he would be lynched when he landed. Consequently when a crowd of men rushed at him he probably stood them off with his revolver till an officer came to take his surrender. Such an incident would account for the report to the effect that on landing he fired upon the German army whole and intact.

All interested in aviation will wish him a quick recovery, and a term of imprisonment as short and as little irksome as may be.

The other two officers, Flight-Commander Babington and Flight-Lieut. Sippe returned un wounded, though each of them had about a dozen holes in his machine, one of them having a neat row of holes punched from back to front of one wing where a machine-gun had pumped a succession of bullets into it, happily missing the fuselage and all important fittings. It is quite an error to say, as was reported, that the machines came back in rags. The fact of the machines being hit so often is, however, a strong argument in favour of using panelled fabric which will not tear beyond a certain line of weaving, and in favour of using canes along each rib to hold split fabric down.

The promptitude of the French authorities in recognising good work is shown by the fact that the two arrived back at their starting point in the early afternoon—Lieut. Babington having left his machine some few miles out, owing to shortage of petrol—and at 6 p.m. or so, orders were issued for the garrison to parade for the presentation of the Crosses of the Legion at 10 a.m. next day. The instructions and the crosses had to come from General Joffre's Headquarters, so the smartness of the work may be realised.

Those who were present state that the investiture of the two officers with their orders was a most moving spectacle. The General commanding the Army Corps which has defended the Eastern Frontier so nobly, himself came to the ceremony. War-worn troops, with the nearest approach to full dress they would muster, surrounded the square. Flags waved, bands played, and in the middle of the square were stationed a little group of general officers and their staffs, while in front of them stood the two young aviators, feeling, one is assured, very much more frightened than ever they did while they were the targets of all the firearms of Friedrichshafen—and when they were in turn embraced by these high officers it is said that they shook with emotion.

* * *

A Berlin telegram, quoting the "Schwäbische Mercur," states that when Squadron-Commander Briggs was taken to the hospital at Friedrichshafen, the officer escorting him warned the public not to indulge in any demonstration, saying that the prisoner was unarmed and under the protection of the Red Cross. Regarding the shots which brought him down, Squadron-Commander Briggs remarked that the German

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artillery practice was "devilish good." [This last sentence sounds more like the truth than any of Reuter's messages concerning aeronautical affairs have done for a long time.—Ed.]

* * *

It is reported that during the bombardment of Zeebrugge and other portions of the Belgian coast by the British Fleet, good service was rendered by a detachment of seaplanes under the command of Squadron Commander J. Seddon, R.N.

It is also reported that the bombs which recently did damage to the oil stores at Bruges were dropped by Flight-Lieut. Nansen, R.N.

* * *

In the House of Commons last week Mr. Booth (L, Pontefract) asked the Prime Minister if instructions were given to the aviators who bombarded the Zeppelin sheds at Friedrichshafen to avoid neutral territory; and what is the policy of his Majesty's Government with regard to the passage of warlike machines over the land or territorial waters of neutral countries.

Mr. Churchill, who replied, said: Instructions were given to the naval flying officers who attacked the Zeppelin factory at Friedrichshafen to avoid neutral territory, and the course drawn on the maps supplied to them should have taken them well clear of Switzerland. When machines are flying at a great height it is almost impossible for any but a skilled observer to determine with any accuracy the course the aircraft are taking unless he is directly beneath them. No agreement was reached at the Paris Conference, 1910, in regard to the passage of belligerent aircraft over neutral territory.

[One would like to point out to Mr. Booth that unfortunately Continental countries neglect to paint their frontiers with a band of colour such as is shown on most maps, and therefore it is a trifle difficult for an aviator to distinguish his exact locality except by important land-marks such as towns, lakes, and rivers. Anyhow, it was a tactless question to ask, and Mr. Booth would do much better if he confined his interest in aviation to running races with his constituents' pigeons, as has hitherto been his custom.—Ed.]

The correspondent of the "Tijd" at Sluis gives the following account of the bombardment of the Belgian coast by the Franco-British squadron:—

"On Monday morning the Belgian coast towns and the German batteries were time after time the object of the Anglo-French Fleet. British aviators reconnoitred the littoral, along which German guns have been well concealed in the sand dunes."

* * *

The Belgian correspondent of the "Daily News" reported on the 27th as follows:—

"In the air, too, the men of the Navy have been busy. Every day, save in absolutely prohibitive weather, they take little trips over the enemy's lines starting up with a few bombs and returning without them. Yesterday afternoon those on the Belgian side of the Yser heard a terrific explosion away behind the German lines, and there was considerable speculation as to what misfortune had fallen upon the foe. As a matter of fact it was Commander Samson again—may good fortune continue to attend his infinite skill!—who had neatly scored with a couple of bombs on a German ammunition convoy, during the course of his customary afternoon blow in a favourite hydroplane. [Note the usual journalistic inaccuracy, and in any case Commander Samson was not likely to be flying a seaplane. Further, one would like to know why the Censor passed his name and deleted that of Squadron-Commander Briggs from the first reports of the Friedrichshafen affair. The "Chronicle" correspondent reports a similar incident.—Ed.]

The "News" man continues:—"And here, perhaps, I may speak in parenthesis of the remarkable new weapon with which the members of the Flying Corps (sic) are being armed. The Germans will probably find out all about it in due course. It is a new pattern dart, not dissimilar in appearance from that in use by the Taube and Aviatik experts. But it has a singular virtue of its own. In its head is fixed a highly inflammable material which immediately ignites when the dart passes through any substance. The dart continues to fall, but the fire remains behind. The value of such a weapon in counter-



(Photographs by Herbert, Windermere)

The "Pusher" monoplane of the Northern Aircraft Co.'s School at work. Below it is seen just getting under way; above it is just after alighting, piloted by Mr. Ding and carrying a feminine passenger.

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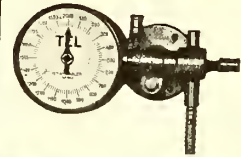
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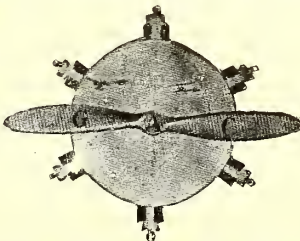
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ing Zeppelin attacks can as yet only be imagined. But it is calculated that one dart dropped into the envelope of an airship would cause it to burst instantaneously into flame. These darts are to be dropped automatically, fifty or sixty at a time, and they spread over a considerable area in their downward flight. The cost of them is approximately five francs each."

[Very interesting information if one could depend at all on its accuracy. An incendiary arrow igniting by friction seems a fairly simple chemical possibility, but it is doubtful whether it would set light to an airship, for it would not ignite till it was inside, and pure hydrogen does not burn. It has to be mixed with air first, so that hydrogen must escape from the envelope before it will ignite. The cost of the arrows seems excessive.—Ed.]

* * *

Flight Lieutenant Richard Thomas Gates, of Hendon, manager of the London Aerodrome, who died from injuries sustained in landing after a night flight on September 14th, aged 38 years, left estate of the gross value of £1,019, with net personalty £906.

* * *

Mr. Alcock, appointed a Warrant Officer, was assistant to M. Ducrocq at Brooklands for several years, and more recently was the able pilot of the Sunbeam-engined Maurice Farman.

Another old-timer returned to aviation is Mr. C. W. Abbott, of the Lancia Motor Co., who has been appointed Warrant Officer, First Grade, R.N.A.S., for inspection of aircraft under construction. Mr. Abbott learned to fly in 1911-1912 at the Hewlett-Blondeau School at Brooklands, and gave promise of being an excellent pilot, but he never flew, except as a passenger, after passing for his certificate.

MILITARY.

A Second Supplement to the "London Gazette" issued by the War Office on November 29th contains the dispatch received by the Secretary of State for War from Field-Marshal Sir John French, Commanding-in-Chief the British Forces in the Field. It is dated from General Headquarters, November 20th, 1914, and contains the following reference to the Royal Flying Corps:—

"The work performed by the Royal Flying Corps has continued to prove of the utmost value to the success of the operations. I do not consider it advisable in this dispatch to go into any detail as regards the duties assigned to the Corps and the nature of their work, but almost every day new methods for employing them, both strategically and tactically, are discovered and put into practice. The development of their use and employment has indeed been quite extraordinary, and I feel sure that no effort should be spared to increase their numbers and perfect their equipment and efficiency."

[It is earnestly to be hoped that Sir John French's desire for more aeroplanes will be gratified, and that orders will be given out for the types of machines most calculated to be effective and not necessarily for those of the greatest theoretical efficiency. The Field-Marshal's comments on the utility of aircraft coincide curiously with the opinions expressed during the past two years by those who have most strongly advocated an adequate system of aerial defence.—Ed.]

* * *

The following passages in the descriptive account which has been communicated to the Press Bureau by an Eye-Witness present with General Headquarters continuing and supplementing the narrative published on November 22nd, deal with aircraft:—

November 21st.

The following is a collection of extracts from the diaries of German soldiers. They have no special bearing on the present phase of the operations, for they refer to a period which has now passed; but they throw some light on the different aspects of the actual fighting, and may, therefore, be of interest to those who have no first-hand experience. . . . Those of us in the field are sufficiently uncharitable to derive comfort from any revelation of the success of our operations, whether it be in the nature of the actual damage inflicted or of the depression caused thereby.

From a letter of a Gunner of the Field Artillery.

"21/10/14. No. 11.

"On September 26th a French aviator dropped a bomb on Cambrai, killing four Landwehr men and tearing off the arm of the paymaster."

From a letter of a man of the 242nd Reserve Regiment of the XXVIIth Reserve Corps:—

"The shooting of the English artillery is marvellous. They get the right range and direction every shot, and place each shell within a yard of the previous one. They must be wonderfully well informed of our movements. I don't know whether the intelligence is obtained by their aeroplanes, which are always hovering over us, or whether they have telephones behind our lines."

[It is curious to note in this that the British are credited with the same high efficiency as that with which the Germans are credited by our people, which is distinctly a hopeful sign.—Ed.]

* * *

The following passages in the descriptive account, which has been communicated to the Press Bureau by an Eye-Witness present with General Headquarters, continuing and supplementing the narrative published on November 25th, deal with aircraft:—

November 23rd.

Beyond the hardship inflicted on individuals the change in the weather has chiefly affected aerial reconnaissance and the question of transport.

The former has been much facilitated in two ways. In the bright sunlight and through the clear atmosphere the whole landscape is very clearly visible, even from the height at which our aviators are forced to fly by the hostile anti-aircraft guns, while, against the white background of snow, entrenchments, roads, transport, rolling stock, and troops show up most distinctly. On the other hand, the present cold experienced at high altitudes, intensified by the speed at which the aeroplanes travel through the air, greatly increases the rigour of the work. In spite of the employment of every device for retaining warmth both pilots and observers have on some recent occasions returned so numb that they have to be lifted from their machines.

To turn to the operations: The 20th, 21st, and 22nd have been as uneventful as the preceding three days. To avoid any misconception, however, it must be explained that the use of this adjective is entirely comparative. What is now considered as uneventful is not so in the peace sense of the word. It merely signifies that no active operation of any special vigour by either side has stood out from the background of artillery bombardment. This continues day and night with varying intensity, hardly ever ceasing altogether, and includes fire from the 42cm. howitzers—one of which is believed to be in use against our left—down to that of the anti-aircraft spitfires.

Saturday, the 21st, was of a similar nature to Friday. On the right centre the German airmen were active and dropped a bomb on Bailleul. This had no more useful effect in helping on their operations than most of the other similar exploits of their airmen, for the bomb dropped on the hospital.

Being fitted with a sensitive fuse, which acted on impact with the roof, it detonated midway through the ward, just below, before reaching the floor. Luckily, the ward had just been vacated by forty patients, but one wounded man, who had been left behind, was again wounded. Every window within a large radius of the explosion was shattered. On our right a German aeroplane was forced to descend in our lines after an action in the air with one of our machines, and the observing officer and the pilot were made prisoners. They were found to be furnished with proclamations printed in Hindi, recommending the native troops to desert.

Sunday, the 22nd, was unusually quiet and more like the Day of Rest than it has been for some time. Two more German aeroplanes were brought down, one was chased by one of our machines for some distance, during which a running fight was kept up, in which our aviator was slightly wounded in the hand. It then came down in our lines. When they landed the German observer and pilot appeared

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to be much surprised and disgusted to discover where they had descended. The officer who succeeded in forcing down this hostile machine had previously flown over Lille, where he had dropped several bombs on the aerodrome. The other aeroplane was also chased and forced to descend, but managed to do so inside the German lines.

* * *

The following passage in the descriptive account communicated by an eye-witness present with General Headquarters, dated November 26th, says:—"Our aeroplanes have been especially active in offence during the last few days, having dropped 123 bombs on various targets which need not be specified.

* * *

Colonel Ashmore, whose appointment as Wing-Commander, R.F.C., is gazetted, learned to fly at the Bristol School at Brooklands, his certificate, No. 281, being granted on September 3rd, 1912.

After taking his certificate he was appointed to the Reserve of the Royal Flying Corps. During the past year he has made a tour of the world as a member of the staff of General Sir Ian Hamilton, inspecting overseas forces.

* * *

Mr. F. A. P. Sylvester held an inquest on Wednesday of last week concerning the death of Second Lieutenant Henry Roland Fleming, who was killed on the Tuesday morning while flying at the Central Aviation School, Upavon. Harry Fleming was 28 years of age and was married to the widow of the late Captain A. Wyness Stuart, who was killed on manoeuvres in 1912. He took his certificate as a pupil at the Bristol School at Brooklands in 1911, and afterwards became an instructor there with Mr. C. P. Pizey, now a Commander in the Greek Navy.

He had not flown for some two years, confessing, when he gave up flying, that his nerve had gone, though he hoped it would come back after a rest. On his marriage he took possession of the Talbot Hotel at Ripley, and when the war broke out he volunteered for service, joining the Upavon School last month.

Major Webb-Bowen and Captain Stopford, who were flying when the accident occurred, saw him close to the flying sheds. His machine dived almost vertically, turned on its back, glided a short distance upside down, eventually turned nose down again, and dived into the earth. At the outset it was twelve hundred feet up, and finally dived from a height of four hundred and fifty feet, after which Mr. Fleming was found dead in the seat. The machine was previously in good order. Witnesses ascribed the accident to a side slip, which could not be set right. A verdict of accidental death was returned.

A newspaper report of the accident states that the machine was a B.E., in which case an uncontrollable dive of 450 feet seems an impossibility unless either something in the machine broke in the air, as has occurred in other B.E.s, or unless the pilot lost consciousness.

Many officers and men of the Royal Flying Corps attended the funeral at Amesbury. The coffin, covered by the Union Jack, was borne to the graveside by members of the corps, Captain Godfrey Paine, C.B., M.V.O., R.N., Commandant Central Flying School, being in command. The Rev. Colin Campbell conducted the service. The family mourners were Mrs. Fleming, the widow; Mr. and Mrs. Wilson, sister and brother-in-law; and Miss Hilda Fleming and Miss Edna Fleming, sisters. Among the flowers was a magnificent wreath from the officers of the Central Flying School, Upavon.

Mr. Fleming came of a family resident in Surrey. His father went through the Crimean War with the 4th Dragoon Guards, and his brother was killed in the South African War.

In the old days at Brooklands Harry Fleming was one of the most popular and cheerful of the pioneer aviators, and those who recollect him in those days will cherish his memory.

* * *

Recent casualty lists have given the information that Captain Bonham-Carter, R.F.C., and Lieut. Orr Paterson have been wounded. One gathers that Captain Bonham-Carter was seriously wounded in the hip by shrapnel after landing from an artillery observation flight and when walking up to report the results of his observation. It will be remembered that he

has been mentioned in dispatches, and has been awarded the French Legion of Honour.

The nature of Mr. Orr Paterson's wounds are not known at the moment, nor is it known how he was wounded. He will be remembered as a pupil and later as assistant-instructor at Vickers School at Brooklands.

* * *

It is stated that Mr. Moutray Read, recently reported as wounded and in hospital in Paris, was injured through his horse being shot under him and rolling on him, so that his leg was badly smashed in several places. He was at the time apparently attached to cavalry, and not R.F.C.

* * *

The names of the following officers appear as having been wounded on November 23rd:—

Hughes-Hallett, Captain H. H., North Staffordshire Regiment and Royal Flying Corps.

Loraine, Second Lieutenant R., Royal Flying Corps.

Captain Harold Hughes-Hallett joined the West India Regiment from the Militia, and afterwards transferred to the North Staffordshire Regiment. He served with the Central African Battalion and in the Yao contingent of the 3rd East Africa Battalion. His war service includes the operations in Sierra Leone and Somaliland, and he was present at Jibballi witu Sir Charles Egerton. He is a graduate of the Staff College, and was recently serving with the 3rd North Staffordshire Regiment and the Royal Flying Corps.

Mr. Loraine is, of course, well known to all connected with aviation as a first class sportsman, and a first class actor (the latter apparently more by accident than by predilection). He saw service in South Africa, took to flying in its earliest days, and in 1910 captured the honours of being the first man to fly to the Isle of Wight, and the first man to fly across the Irish Sea. It is reported that Mr. Loraine received a shrapnel bullet in a lung, but is not in serious danger if no complications supervene.

* * *

One learns with much satisfaction that the injuries to Captain T. O'B. Hubbard, R.F.C., received in an accident recently at the Central Flying School, are not as bad as were at first reported. No bones are broken, and he is merely suffering from a strained ankle and general shock. Probably he will have to be off duty for some time, but there is no likelihood of permanent injury.

* * *

A British officer-aviator on active service, writing to a friend in this country on November 20th, says:—"I saw a great hunt this morning. I was waiting anxiously with my machine to regulate the fire of a battery when an Aviatik passed overhead, pursued by a Voisin. The Boche very wisely cleared out, but the Voisin gained all the time. The Voisin had only a rifle, but had it had a mitrailleuse the German flying corps would have been minus another machine by now.

"When just over the border the Aviatik did an almost vertical dive, leaving a thick trail of white smoke behind him. He dived some thousand feet, I should say, and then flattened out, but the Voisin wisely did not swallow the bait and drop low over the Boche cannon. It made me feel sick to sit still while it was going on."

[Here we have evidently the basis of the story reported a week or so ago of German machines hiding themselves in a cloud of smoke. When a German dives vertically like this, as is apparently their habit in order to escape pursuit, the oil in the crank-case of the engine will naturally run to the forward end, and so will flood the forward cylinder and possibly number two also with oil—hence the cloud of smoke. The water-jacket explanation given later by the writer is less probable. The dive is made with the triple idea of offering less mark to the pursuing machine above, of gaining increased speed, and also to entice the pursuer within range of the German guns.—Ed.]

The writer of this letter continues:—"We heard later that the Boche descended 'en panne' in our lines; anyhow, he descended short of his aerodrome. It appears that the thick, white fumes he left behind him when he dived were steam from a punctured water-jacket. For this sort of chase the Voisin is simply unparalleled."

The same writer continues:—"I found a grave a few days ago close to B— with a cross on it bearing the inscription, 'Some of the Best.' I was on the point of respectfully saluting when I went closer to see the name of the regiment, which was apparently written in smaller letters. What I read was, 'Horse Flesh.'" One is left in doubt whether those who buried the horses meant this as a genuine mark of respect for their four-footed friends, or whether it was a deliberate attempt to pull the legs of future visitors to the battlefield.

A letter from an officer of the Royal Flying Corps to a friend in this country states that about a fortnight ago one of our aviators managed to capture a German aeroplane which was over our territory and too far away from the German lines to get back before its retreat was cut off. He states that the greatest fun in the Flying Corps is chasing the German aeroplanes, but when they are over their own country they always dive down. The same officer states that not long before he had chased one down from 6,300 feet to 3,500 before they gave up, and by that time the German troops started peppering the British aeroplane, which had to clear off. However, his passenger had managed to get twelve shots at the other machine, though he did not have the luck to bring it down. The weather at that period was awful, the days being misty, and on the particular day on which he wrote all the machines were pegged down to the ground to prevent them from being blown away. In spite of this, one machine was blown over and somewhat damaged. One finds here a further confirmation of the German habit of diving as a decoy.

A British officer-aviator who has done a great deal of flying on active service writes:—"One comes across a curious point in psychology when one watches a 'bus under fire—friend or enemy. If it is a friend, of course one curses the Boches. But if a Boche! He's an enemy, of course, but he's an aviator, and, personally, I was glad this morning when one of our shells, the one and only one fired, missed an Aviatik by inches. When one is in the air oneself a shell some way off sounds like a sneeze. When you hear it as an explosion, it's damned close!"

The following letter from a Garrison Gunner, written on November 20th, will be of high interest to those who have relatives in the R.F.C. :—

"Our artillery is being gradually reinforced, and we are able now to reply to the German heavy howitzers with shell that is even weightier than their much-vaunted Black Maria. The howitzer I refer to is 'Mother.' She has been so christened by the Tommies, and the name is not inappropriate. She is of matronly dimensions, but comely withal, and has done excellent work whilst she has been with us, and more than one of her family of field batteries scattered round the front owes its existence to the attention Mother has devoted to the German eight-inch heavy howitzers. Mother's shell weighs 300 lbs. She ranges most accurately, and, indeed, she has had four direct hits on German guns in the past fortnight. A direct hit is only recorded by the airman when the shell actually strikes the enemy's gun.

"Mother is usually accompanied by 'Archibald,' which is one of the new anti-aeroplane guns. Archie is mounted on a motor lorry, and yesterday brought down a Taube aeroplane, much to our delight. He fires a 13-lb. shrapnel shell and is daily becoming more expert in his attentions to hostile aircraft. Our five-inch battery is still doing its good work, and is constantly keeping hostile batteries quiet.

"After a hostile battery had been shelled a short time ago our airman reported next day that only four of the six German guns had been moved to a new position, so that it appeared that the other two which had been left behind were of no further use."

In a letter to a friend in Bristol, Mr. B. C. Hucks, second lieutenant, Royal Flying Corps, writes describing the narrow escape reported last week:—

"On a reconnaissance flight a few days ago we were heading into a strong wind, blowing I should think between fifty

and sixty miles per hour, at a height of 6,000 ft. above the German lines. Consequently we made very little progress, and remained almost stationary. This suited our purpose admirably, as it made our operation of watching our gun-fire easier. But it also suited the gunners of the German anti-aircraft guns, for they fired on us shell after shell. We stuck on, knowing how difficult it is to get such a target as an aeroplane, which at 6,000 ft. looks a wee speck. I saw and heard the shells bursting round us, and we had just finished observing the last gun fired when—crash, and the left plane opened up and I realised we had been hit. A hole big enough to get through, with the torn fabric flapping away in the wind, was altogether too good a reminder of the situation.

"One's feelings under these conditions can better be imagined than described, as the horrid uncertainty of the real extent of the damage, and the consequent expectancy of the whole machine crumpling up and crashing to earth, gave me a somewhat anxious time in getting to earth.

"However, I managed to get back, and found that the machine was so badly damaged that it had to be sent back to the base to be rebuilt. The piece of shell had passed through the plane, carrying away two ribs, a main strut, petrol pipes, and passed just between my passenger and myself. Taking all this into consideration, one may call it a miraculous escape.

"I had another bullet in my main spar the other day, which split it badly. However, these little things are sent to try us. . . . The weather makes our work rather difficult just now."

Lieut. Douglas Beatty, A.S.C., of Colwyn Bay, in a letter to Mrs. Beatty describes an affair over Hazebrouck on November 20th. "We experienced great excitement at rail-head yesterday. It was a beautiful day, perfectly cloudless, and a couple of English aeroplanes were flying overhead. Then a German Taube appeared, and the Guards fired with their rifles. All of a sudden there was a fearful bang and a bright flash in a field about 1000 yards from where I was standing, followed by two others a little farther off. The bally German was letting fly at us with bombs.

"A little later two more German planes appeared. Some of our artillery must have seen them, for soon we could see shrapnel bursting all around them. There was a bang and a yellow, flamelike flash, a little cloud of yellow smoke, and the shell had burst. Suddenly one of the German Taubes seemed to crumple up and fell to earth like a stone.

"Then came an English biplane, and he and the remaining German manœuvred about for ages to get the higher position. Ours seemed much quicker, and our chap got on top. There were a few faint bangs and flashes and the old German came down disabled. It was exciting watching it."

[One judges from this (a) That the Germans knew the exact position of our rail-head and were out to destroy supplies. (b) That our anti-aircraft guns are improving. (c) That the remaining German was really a "Taube" and slow, or that some of our new fast "scout-destroyers" are getting to work.—Ed.]

A lieutenant, R.G.A., writing on November 15th, says that in spite of rain and wind, fairly heavy snow, and severe cold during the previous two days, this day "one of our airmen faced the elements and gave us the range. I do not know how he did it, but he did. The last I saw of him was just before the snowstorm began. He was then coming back from the enemy's lines, making slow progress against the wind. It was cold enough on the ground behind a hedge; what it must be some 4,000 ft. up, plugging against a gale, I leave you to imagine."

[Evidently our friend of the R.G.A. has not yet grasped the fact that the wind currents in an aeroplane are the same whether flying with or against the wind, and that a gale is only troublesome in that it throws the machine about when near the ground.—Ed.]

An officer in the R.A.M.C. writes:—"With the naked eye we could see a German captive balloon floating in the air, evidently acting as an observation post for their artillery fire. The roar of guns was continuous, and all along the ridge or

hills we could see the smoke balls of bursting shrapnel. It was a beautifully clear, sunny afternoon, and we could see our aeroplanes passing along the position, often almost lost to sight by the smoke of the shrapnel fired at them by anti-aeroplane guns. At one time I saw eight aeroplanes at once, two of them chasing a Taube (I will never waste any money at Hendon again). I have a good pair of German Zeiss glasses, and it was really thrilling watching the aeroplanes working."

* * *

An officer of the R.F.C., writing to a friend on November 17th, says:—"I am, of course, having the time of my life out here, with quite as much excitement as anyone could possibly wish for; we get plenty of flying and get shelled every time we go out. I have just come in, having done 2½ hours in reconnaissance to-day.

"I am flying Blériots and don't like them a bit; it was very rough yesterday, and I wished I had the old — instead of the So Blériot I was on, though the Army will come back to the use of monos as well as biplanes sooner or later. The only excuse for ordering Blériots is that spares are easily obtainable."

* * *

An Army Service Corps officer writes:—"To-day (November 20th) a German aeroplane paid us a visit and dropped two bombs, both within 400 to 500 yards of where we were standing, but nobody took the slightest notice of the risk; we were all watching the attempts of our men to bring the daring flier to the ground and stop his little game."

* * *

A private in the "Artists' Rifles," writing from the war area to his brother at Ealing, says:—"On Thursday, on arrival at a place not very far from the firing-line, we were received by two German aeroplanes, which were promptly shelled by our guns, one being brought down. The weather was beautiful, and the 'planes were quite visible in the blue sky, though at a great height. On Sunday afternoon we went to the aviation ground here. The Army seem fond of Avros and Henri Farmans. There are many of them over here. Some German aeroplanes could be seen dropping range-finding bombs on our lines. Then some came right over us and were fired on by some guns. Also, there was an aerial duel."

In a later letter he says: "At the beginning of the week we saw aeroplanes being shelled, and, on another day, when we were digging trenches, a German machine passed low over us (the wind was high and the clouds low), but our officer in command did not give permission to fire on it till it had gone, though a machine-gun in the flying-ground was hard at work. Our aviators fly in all weathers, yesterday several of them on Avros being out in a very high wind (about 50 m.p.h.)."

In a third letter this interesting narrative continues:—"On Tuesday we were out on a march, when a German aeroplane dropped a bomb 200 yards in front of our advance guard; it did no damage, however. Nearly every day several German aeroplanes raid this town and are shelled. I and another man saw a most interesting duel in the air. A German machine and an English one, both showing up clearly against the blue sky, were manoeuvring at about 3,000 feet up, the German machine being shelled when possible by the English guns. Suddenly the German dropped a petrol bomb on the Englishman, but missed, and soon after that we saw the German falling, its wings collapsing during the fall. We got to the aerodrome, or near it, just as the Englishman was landing. His machine was an Avro, and was faster than the German. Yesterday a German aeroplane dropped a bomb onto the hospital here. I saw the damage after. The windows were smashed and the church near by was also damaged."

[A remarkably interesting week. Evidently the "Artists" are in luck. It is good to have so much confirmation of the utility of the Avro.—Ed.]

* * *

The "Times" Paris correspondent reported on Nov. 28th:—"Our airmen have had a hard time in the recent cold spell, encountering at 6,000 ft. 50 deg. of frost. They are out for long spells under a constant strain, and the wind they meet at the great height at which it is necessary to keep their machines reduces their speed and makes them an easier mark

for the enemy's anti-aircraft guns. One of our aeroplanes came down the other day pitted with 60 bullet marks. Thanks to the bullet-proof seat the pilot was not hit. [The first mention of those interesting little steel plates for which thanks are due to Messrs. Firth.—Ed.]

"The German air navy has not shown the same high qualities of courage and enterprise as have been exhibited in their army and fleet—or such is the impression of British airmen who have been right through the war. There was the extreme case lately in which one of their airmen came to ground with his machine untouched, out of sheer loss of nerve.

"One of the enemy's aeroplanes was brought down early in the week among the Indian troops. They were surprised at the size of the machine, having always thought of it as a kind of huge insect, and they were a little relieved to discover its fallibility."

* * *

Mr. Frank Hillier, writing in the "Daily Mail" last week, informs us that a British aviator was flying low "above some German gun displacements to observe exactly their number and situation when he was brought down by the fire of the German aircraft guns." German gun displacements are what our gunners hope for, but it is their gun emplacements which are generally sought out by our aviators. One has still to hear of a British pilot being brought down by a German aircraft gun, but several have had narrow escapes of being brought down by their anti-aircraft guns, and one or two have been hit by German rifle and machine-gun fire.

FRANCE.

Apropos the leading article in this paper the week before last on the subject of standardising those aeroplanes which have proved efficient, and compelling other constructors to build them, some interesting news regarding the French trade has since been received, showing that the French authorities have already adopted practically the same course as was advocated therein.

The French army is apparently standardising four makes only. The first is the big Voisin gun-carrier. The second is the Caudron, the high-powered type being excellent for reconnaissance on account of their wonderful climbing powers. The third is the Farman, both "short-horn" Maurice Farmans and Henri Farmans being used for tactical reconnaissance and for carrying small-arms. The fourth is the Morane, the "parasol" type being good for single-seat work, such as detailed reconnaissance and bomb-dropping.

The Nieuport and Bréguet firms are building Voisins under orders. M. Gabriel Voisin, in a truly patriotic spirit, has given the use of his designs free of charge to the French Government, and is supplying blue-prints of the details of the machines gratis to the firms who are building them.

Through the personal intervention of the chief of the French Aeronautical Service, it is said, it has been arranged for the Blériot firm to build Caudrons. It is also stated that the Blériot firm has bought up the Deperdussin business with all its works, and that M. Blériot, in conjunction with M. Béchereau, the talented designer of the Deperdussin, is endeavouring to produce an entirely new type of machine which is expected to meet with enthusiastic approval from the military authorities.

This standardisation of proved types and the spreading out of orders for them among the firms whose types are not approved is exactly analogous to the method advocated in this paper as mentioned above, and it is certainly somewhat curious that the two schemes should have been evolved absolutely independently of one another.

* * *

One is now permitted to state that THE AEROPLANE is indebted to the Sapeur-Mécanicien Hypolite, of Escadrille 30 of the French service, for the photograph of the Zeppelin brought down at Badonvillers, which appeared in THE AEROPLANE of November 18th, and has been so much appreciated by people in this country. For the photograph of the Aviatik which appeared in the same issue, THE AEROPLANE is indebted to Sapeur-Mécanicien Finand, of the same escadrille.

This escadrille, which includes the Sergeant-Aviatur Noel, reads THE AEROPLANE regularly, and it was a kindly thought

of these two good soldiers of our friends the French to indicate their appreciation by sending us such highly interesting photographs. On behalf of the readers of THE AEROPLANE, one wishes to offer them many thanks.

* * *

The following note appears in the official communiqué issued in Paris on November 28th:—"Towards evening our artillery brought down a German biplane occupied by three aviators. One was killed and the others were taken prisoners."

[Being an official communiqué one is forced to believe that there were three men in one machine, but one still wonders why.—Ed.]

* * *

A French aviator, writing on November 25th, tells us that on November 23rd he was at P— and flying from 7 a.m. to 2.30 p.m., watching operations. During this time he counted three hundred German shells exploding in a field by the River V—, where there was not a single soldier of the Allies. He reports the weather as being very cold and says that the ground is covered with snow.

* * *

The latest information is that M. Pierre Verrier is now in hospital at the Hotel des Pins (Hôpital Militaire No. 53), Les Sables d'Olonne, La Vendée, France. He has had a very bad time with his wounded foot, owing to carelessness in the attention it received at the first hospital to which he was sent, and in consequence, instead of being fit to fly again in about three weeks after he was wounded, he is likely to be laid up for at least another two months. He has been awarded the Military Medal of the Legion of Honour for distinguished services, and has received the official notification thereof.

The hospital where he now is was started by a famous French doctor at his own expense, and it is thanks to this gentleman that M. Verrier retains his leg, and perhaps his life. Five operations were necessary before it was certain that the leg would not have to come off. Apparently the people at Amiens attended to the hole whence the bullet came out and forgot the one where it went in, with the natural result that the wound got into a terrible state. With a foot as big as his head, the unfortunate Verrier spent 40 hours in the train before reaching his present haven of rest.

Since his arrival there he has been presented with a special

medal by the local people, and it was presented to him in state, the ceremony being most touching, as one may imagine when one thinks of the merry Verrier making a graceful speech while supporting himself on crutches.

* * *

An official note was issued in Paris on November 28th, stating that on November 18th, at about 6.30 a.m., a military aeroplane, piloted by a sergeant and carrying a lieutenant as passenger, came upon a German machine flying in the direction of Amiens. The enemy was chased and overtaken while dropping bombs on the village of Cailly and the local aerodrome. The officer fired 100 mitrailleuse shots at the German without doing much damage. Finding himself hard pressed, the latter turned quickly and steered at the French machine, apparently with the idea of ramming it. The sergeant-pilot turned such a violent "cartwheel" in order to dodge the German that the mitrailleuse became unshipped and fell into the "capote," doing no particular damage, but of course allowing the Boche to escape at leisure.

Another French officer, stationed at Amiens, saw the operations from the ground, and started in pursuit on his Morane, accompanied by a mechanic who got ten shots in, presumably with a rifle. The German replied, and scored a hit in the tank, forcing the Frenchmen to abandon the chase. The mechanic received severe frostbite in his left hand through exposing it over the side of the machine in order to fire. Considering the cramped passenger accommodation in the Morane, it is not surprising that the mechanic did not score a "bull." On the same day at 10.45 a.m. a caporal-aviateur and an officer went "Boche" hunting on a Morane and again had the worst of it, the German damaging their machine and forcing it to land at Amiens.

* * *

The "Daily Mail" correspondent at Le Havre reported on Saturday that, as a reply to the Germans dropping manifestoes among the Indian troops inciting them to revolt, and hoping to profit by the discontent existing in the German army, the following proclamation in German is now being scattered by French aviators over the German lines:—

"To the German Soldiers!—It is not true that we French are shooting or mishandling German prisoners. On the contrary, our prisoners are well treated and are given enough to



SOME NEW PILOTS.—Left to Right, Messrs. Abbott (Caudron), Bond (Caudron), Courtney (Grahame-White), Crowe (G.-W.), MacGregor (Candron), Polehampton, Shepherd, Strickland, and Upton (all Grahame-White).

eat and to drink. Those of you who are weary of your wretched existence can safely report yourselves, unarmed, to the French advance posts. You will be well received. After the war everyone will be allowed to return home."

* * *

Mr. H. J. Greenwall, the "Express" correspondent in Paris, reported on November 28th thus:—

"The last Taube that flew over Compiègne dropped a bomb on a schoolhouse, and there is little doubt that it was meant for the Church of St. Antoine, because it fell at the moment when the people were coming from Mass. In all, 26 bombs have been dropped on Compiègne, and they have all fallen near a church at the hour when worshippers were leaving church. All those that have wrought destruction among the population of Amiens, Lille, Bethune, Hazebrouck, etc., have had women and young children for their principal victims."

[Possibly the bombs chanced to fall near the church, but the reporter credits the possibilities of bomb-dropping with a greater accuracy than is really the case. Probably the German was aiming at the town promiscuously—an equally reprehensible act—but if he aimed at the church particularly he would be almost certain to miss it.—Ed.]

* * *

The special correspondent of the "Daily News" in North-East France reported that on Monday of last week, at Bailleul, a German aeroplane was engaged by an English aviator, and the German was wounded in the arm by a revolver-shot and forced to descend. Another German aviator, with his machine, is also reported to have been destroyed within the English lines round Ypres. Since Friday there has been no repetition of the bomb-throwing.

* * *

The "Times" special correspondent at Boulogne reported on November 24th that six bombs were thrown on Hazebrouck the previous week. One fell in the rue des Hollandais. On both sides of the street windows were broken and doors pierced by the bullets. Two refugees were seriously wounded. A workman had both arms blown off and was also struck in the chest by a splinter of the shell. At Armentières two "Taubes" have been brought down by British gunfire.

GERMANY.

The following is an extract from a document issued by the German General Staff on September 26th, dealing with field training and operations:—

"The role of the aeroplane in war has taken on an unexpected degree of importance. Their work should be carried on in a very close connection not only with the general command, but also with the artillery command. Every possible effort should be made on the manoeuvre grounds to train for a close co-operation and a reciprocal understanding between the aeroplane service, the general command, and the artillery.

"Aviators on reconnaissance should be provided with pistols and with hand grenades. Though these latter produce no appreciable result for the most part, nevertheless they have an important effect in creating alarm among the enemy, and should therefore be employed."

[It is curious to note how closely these views approach those given in this paper last week referring to the liaison of artillery and aircraft.—Ed.]

* * *

The Swiss correspondent of the "Morning Post" reported from Berne on November 29th that since the attack on Friedrichshafen the whole shore of Lake Constance and the town of Friedrichshafen are in utter darkness at night, save for small coloured lights at the pierheads. Searchlights are playing continually during the night, and strict orders have been issued to the population that in case of renewed attacks they must go indoors and remain there. If Squadron-Commander Briggs remains in Friedrichshafen it must seem quite home-like.

* * *

Presumably, in the interests of history, one must publish the following from the "Express" correspondent at Geneva, but it is a pity that so excellent a paper should waste its space on the imaginings of such a rumour-monger:—

"Germany, it is stated, is steadily preparing an aerial attack

on London, and on the East Coast towns, even without the aid of the German navy. My informant told me that in normal times it took about two months to construct a Zeppelin at Friedrichshafen with 400 workmen working eight hours a day. All the workmen are experts, and each is employed in a single branch. [Normally, it took about six months to build a Zeppelin.—Ed.]

"Since the outbreak of war over 1,000 workmen are employed at Friedrichshafen, divided into night and day squads. This number may not seem large, but all the finished materials and fittings, as well as sections of the airship envelopes, arrive from other parts of Germany ready made, and the workmen have only to put them together.

"All these fittings were formerly made at Friedrichshafen, but now they are ready to hand, thus allowing a Zeppelin to be built in three weeks, and later probably within two weeks. Formerly, there were two 'sheds' at work, but soon there will be three, and later four. [Judging from these rumours and from recent results, it takes about two and a half weeks to build a Zeppelin and seven months to wind up its clockwork.—Ed.]

"On November 5th the latest and most powerful Zeppelin ever built sailed away north direct from the works without any trials. It was 1,300 feet long, about 45 feet wide, had three 800-h.p. Maybach motors, and had thirty officers and men aboard.

[A Zeppelin with an "aspect ratio" of 29 would probably be unable to lift its own weight. Incidentally, there is real information in these figures, for they indicate a 300-ft. ship with 800 h.p. produced by three Maybach motors of less than 300 h.p. each, which suggests a slight reduction in the size and power of the new Zeppelin as against those projected before war began.—Ed.]

"These are formidable aerial weapons, which I believe cannot even be attacked by aeroplanes with success. They can 'sail' with a weight of two to three tons [including crew, guns, ammunition, and fuel, which does not leave much for bombs; the bigger Zeppelins lifted five tons dead load.—Ed.] Each has seventeen to eighteen independent gas-chambers. They carry several machine-guns and are equipped with pontoons that will allow them to land on water if necessary and continue their flight later. [All Zeppelins have been intended to float on smooth water, and no Zeppelin construction could stand a sea.—Ed.] At Friedrichshafen they are called 'marine' airships, and in small letters on their 'hulls' may be read the significant words, 'Meant for London.'"

[Good intentions are alleged to pave a more exuberant place than Friedrichshafen.—Ed.]

* * *

"T. P.'s Journal of Great Deeds of the Great War" comes out with an amusing article on the difficulties which attend any Zeppelin journey by air to London. This is a quotation:—

"A man went up in a Zeppelin for a nine-hour trial flight. It was a delightful experience, though the shock on the nerves when the great hull creaked every time the engines back-fired, or a jolly gust of wind caught the huge surface, was exceedingly disturbing. When the engines jumped, the entire Zeppelin jumped with an awful jar in all its joints, the wind currents took it and made it pitch at a dozen angles at once, and the passenger, though an experienced and skilled aviator who knows what he is talking about, looked fearfully aloft, in expectation of the back breaking and sending them hurtling to the earth. When he disembarked he was not sorry. He watched one of the crew open the outer skin—the skin stretched over the framework of aluminium girders—and go inside. Then presently he saw something that startled and frightened him. The man inside began sweeping out bolts and nuts—bolts and nuts by the hundredweight. The strain of the flight had had its effect on the immense number of aluminium girders that support the balloons inside the outer skin. Aluminium is a soft metal, and under the jarring all these nuts had worked loose, and had fallen out; it seemed to him that half the nuts and bolts in the dirigible had worked loose, and when he asked he was told that after every voyage of any length this sort of thing happened. He is not going up in a Zeppelin again." {With all one's doubts of the

powers of present-day airships, one has no such contempt as this for German engineering. Frankly, it is unbelievable that either bolts or rivets would be shed in quantities.—Ed.]

The "Chronicle" states that a German professor is trying to persuade his countrymen that the British Army has been reduced to using arrows. Presumably he had heard a garbled version of the news about "flechettes," which shows how easy it is to spread rumours.

Dr. Armgaard Karl Graves has predicted in the "New York Times" that between the 25th and 30th of December a fleet of 15 Zeppelins will visit London and drop explosives generously and impartially. Unless the Metropolis surrenders, explosive and incendiary shells will start huge conflagrations in a hundred different places within half an hour. It is comforting to know that only 15 Zeppelins are to come and not 70 as promised before.

It is also stated that a fleet of flat-bottomed boats will cross the Channel, escorted by 30 Zeppelins, including the 15 which will proceed to London. Dr. Graves should read Mr. H. G. Wells' "War in the Air." He may discover therein that "Noo York" is a more desirable mark for the German Luftschiffen than is London, and will thereby be moved to direct his promised invasion to another place.

RUSSIA.

The Warsaw correspondent of the "Retch" wires that persons arriving from Lodz report that German aviators dropped 18 bombs, which all exploded in a central street, causing frightful damage. The Golrichter factory was entirely demolished, and there were many human victims.

The United States Consul at Warsaw has telegraphed to his Embassy drawing its attention to the dropping of bombs by Germans on civilians in crowded streets last Sunday, adding that the windows of the Consulate were shattered.

[Some day we shall have an American Consul complaining that British or French artillery fire upset his afternoon nap at Frankfurt.—Ed.]

Reuter reports from Petrograd on November 24th that a German aeroplane a few days ago dropped two bombs on Plock at midday, but without doing any damage. They afterwards flew several miles away, but were compelled to descend, and the two aviators who were on the aeroplane were arrested by Cossack scouts and brought to Lodz.

Mr. O. P. Sturk, the "Daily News" correspondent at Petrograd, reports that Princess Shakhovskaya has been appointed an aviator, and has left for the front. She was originally a nurse. The folly of allowing a woman to fly on active service is obvious, for her fate if captured when employed in any actively offensive capacity is equally obvious.

ITALY.

As if to avoid any suggestion of fine-weather flying or "cod-ling" and to get as near as possible to the real thing the 2nd (Venaria) and 3rd (Cuneo) Escadrilles in full strength and equipment were ordered out for a flight right across North Italy from west to east in fog and snow one day last week. To be up to the weather's moods each of the Blériots 80-h.p. carried its waterproof camping-out cover instead of a passenger. Possibly for this reason, all the four machines of the Venaria escadrille needed no cover, two being damaged by bad landings forced on the pilots by the usual engine breakdowns, while the other two, which arrived at Piacenza where there is accommodation, got their wings singed in a petrol blaze which occurred there. Fortune does not appear to be always consistent as regards favouring the brave! No doubt she is fearfully distracted just now.

Snow spoils the continuity of the exploit also for the rest of the men. Unluckily, a military biplane, on its own, also got into difficulties about that time; so that the armchair and fire-side people are in clover as regards material for damning aviation.

Pilots for the Aviation Battalion are being recruited among those privates who have the F.A.I. ticket and are now serving their time in the Army. Pay is offered them at the rate of 2s. 6d. per diem to be doubled directly they can pass for the superior military brevet.

One hears from all kinds of sources that not only the ordinary service aeroplanes but also fast powerful biplanes are much wanted here. There is even talk of introducing the 130-h.p. Salmson-Voisins. Who knows where they could now be obtained? Possibly, Gabardini could build them at Cameri, where the first V.s in Italy were constructed, and, as for the motors, probably an Italian engine, or the "Turin" Mercèdès could be adapted.

I am told on excellent authority that the authorities are extremely pleased with the V.I. Caproni—about which I wrote you. So satisfactorily has this turned out that one would even hesitate to swallow the full particulars of it supplied to the inquiring mind.—T. S. HARVEY.

BELGIUM.

Mr. Percival Phillips, of the "Express," reported on November 29th as follows:—"One result of the aerial work of the Allies was the successful explosion yesterday of the enemy's petrol depot at Ghent. A similar attack was made at Bruges, and, in all, nine bombs were dropped from five aeroplanes."

NORWAY.

It is reported from Langesund, on the southern coast of Norway, west of Christiania Fjord, that the Custom House officer observed an airship at midnight on Saturday near the Norwegian coast, flying in a south-western direction from Langesund Fjord. The airship showed alternately red and white lights. For ten minutes it remained apparently stationary, and then moved off slowly in a western direction, finally disappearing over the south-western horizon. The officer's wife observed the vessel at the same time.

[The Scandinavian countries have no airships, so the inference is that this was a German ship patrolling the mouths of the Baltic against possible entry of British and French warships. A raid on the German Baltic coast seems to be an ever-present fear in Germany.—Ed.]

DENMARK.

Mr. W. M. Duckworth, of the "Daily News," reports from Copenhagen, that a German seaplane, with two occupants, ran ashore in a storm on the West Coast of Denmark. It had been observed in difficulties half a mile from the island of Fan, near Esbjerg. It had started from Brunsbuettel, flew over Heligoland and the island of Sjl, off Schleswig, and essayed to regain German territory. The storm drove the aviators over Sonderho Harbour, where the machine turned a somersault, throwing the pilot and the observer into the water. Both were rescued, having sustained only a few scratches. The machine was considerably damaged. The Germans were arrested by a military patrol and interned.

[Water is a very hard thing to fall on, and it may have been blowing "catpaws," but aqueous scratches seem to be an innovation.—Ed.]

SOUTH AFRICA.

Reuter's special correspondent at Luderitzbucht in a message, dated November 29th, says that a German aeroplane delivered its first attack on our forces at one of the camps, where the railway was blown up last month by the retreating Germans. Two 18-lb. shells were dropped, the objective evidently being a locomotive. The bomb which dropped nearest fell about 210 yards away, but no damage was done.

Aviation Workers O.H.M.S.

Much interesting correspondence has arisen concerning the issue of badges to men employed on Government work, who are pestered by self-appointed recruiting sergeants to enlist. One argument against the issue of these badges has been that the wearing of them is a sign of moral weakness, and that they may simply serve as an excuse for not enlisting.

However, a very good reason for the men wearing badges has been suggested, namely, that although to-day the individual man is quite capable of dealing personally with those who object to his staying at home and working, a dozen years or so hence, or even less, the same men may be asked why they did not do their share in defending the country, and would then have no proof that they had been useful. The cards which are issued by Government consent to men working on Government contracts will probably have disappeared by then, whereas badges which are given out now would probably be



Accessories Co., Ltd., 17, Old Broad Street, London, E.C., and a photograph of this is reproduced herewith. These are made in gilt metal with blue enamel, and the firm mentioned will only supply them to employers, and not to individuals. If required, the name of the firm itself can be substituted for the word, "Aviation," but, of course, this increases the price slightly, and the idea of getting out a standard badge is to reduce the cost to individual firms. Another firm which specialises on badges of this type is Vaughtons, Ltd., Vise Street, Birmingham, from whom patterns can be obtained.

Apropos the enlistment of men who are employed on useful work in general, a very sound argument was put forward by one of the important people in the Football Association last week, when he said that the individual football players were not going to be bullied into enlisting, but they preferred conscription, because then every man, good and bad, would have to take his chance. In such an event they were quite prepared to take their chance along with the rest. The inference is, of course, that they were not going to volunteer to defend the lives and property of people who were unwilling to defend themselves, which is a perfectly logical argument.

Naturally, conscription might somewhat upset the production of war material, such as aeroplanes, for a while, because the lot would fall on a certain number of men employed in armament firms, but in France the majority of the skilled and specially trained workers called up by conscription have been sent back to their work because the Government recognises that they are more valuable at that work than at the butt-end of a rifle, and under such circumstances a man who is producing aeroplanes is undoubtedly doing his duty to his country, for he is doing it under orders, and not merely because he prefers building aeroplanes to fighting.

AUSTRALASIA.

Mr. Douglas Freshney, one time a director of the W. H. Ewen Co. (now the British Caudron Company), sends some interesting particulars of a Caudron type machine built by him in conjunction with Mr. Badgery, who took his certificate at the Caudron School in December last. The two partners arrived in New South Wales in January last, taking a supply of Caudron fittings, and set to work to build the machine at Sutton Forest, a village 90 miles from Sydney. The testing paddock was only 400 yards long, with large furrows across it, so that rolling was only possible in one direction; but after only one "straight," Mr. Badgery commenced circuits and did the first thousand feet in 2 $\frac{3}{4}$ minutes—quite good for a machine of only 45 h.p. (an Anzani). The "aerodrome" is 2,200 feet above sea-level. On one occasion the corrected barograph showed 12,000 feet (14,200 feet s.l.), which is astonishing.

At the time of writing, the "firm" was at Hobart, Tasmania, giving exhibitions under very difficult conditions, with a "get-off" of 120 yards across the then prevailing wind.

Messrs. Freshney and Badgery are the Australasian agents for the Anzani engine and the G.A.C. specialities, and they hope to establish an aerodrome and school at Sydney ere long.

Mr. Badgery is a son of Mr. Andrew Badgery, for many years coroner of the Berrima district, and a member of the well-known pastoral family of that name. He was formerly on the "Hansard" staff of the New South Wales Parliament. One hopes that by his excellent flying he has now wiped out this youthful indiscretion.

FROM DENMARK.

The following interesting notes from Mr. Hildesheim of Copenhagen, told in his own inimitable style, have been held over for some weeks owing to pressure on space:—

A German newspaper, "Berliner Tageblatt," tells from Haag (Holland) that a Belgian aviator, who has gone to London from Antwerpen to give directions to the Military authorities, has declared that there is no real hope to prevent London effective from a bombardement by Zeppelins. A Zeppelin airship appeared over Antwerpen by night, dropping seven bombs which exploded with a great noise, and an examination showed that the bursted pieces of the bombs had a very strong durchschlagfähigkeit (I cannot find the right word; the meaning is: to be able to penetrate through to a great extent). About pursuing the Zeppelins, the Belgian professional man expressed himself as runs: It was quite impossible to pursue the Zeppelin airship over Antwerpen; when by means of her searchlights she found herself discovered, she rose only quite easy to a height of 4,500 ft., where she was lost to sight. Too, they were compelled to stop the bombardement of the airship, as the projectiles shot fell down again in the city and did more harm and killed more persons than the Zeppelin herself. Just as useless is the pursuing of the Zeppelins by aeroplanes. One needs only think out how much time an aeroplane requires to rise higher than an airship and at the same time avoid the fire (shooting) from the latter. And one must, too, remember the difficulties; the aviator has to discover the Zeppelin airship by night when dazed by the light from the searchlights and the city beneath. And yet one must add that every Zeppelin airship has a crew of thirty men and is armoured with four machine-guns in the front and the back gondolas and on the top. Under these circumstances to try to approach a Zeppelin airship would only be to risk one's life useless. And the Belgian aviator terminates as follows: In brief, there is no protection against the Zeppelins; they are strong, armoured airships, easy to manœuvre and capable of flying 400 to 450 miles at a speed of 48 miles per hour.

Further about the Belgian officer's communicate: he speaks of guns on the roof of the Zeppelin's balloon body, and you have written in your paper of L. II. exploding because experiments of this sort were made. I can almost quite sure say, that this is not true, but I doubt much of these roof-guns, as I have never heard or seen of them, although I am a close student of Germany's aerial matters. Concerning the Belgian officer's talk of Zeppelins and aeroplanes rising, you may not be aware of the following figures: To experience this especially, trials were made during 1913's Prince Henry "Upper Rhine" Flight: The Zeppelin airship rose 600 metres in 5' minutes (not by dropping ballast, but only by dynamic use of the rudders), while Hirth on Rumpler Dove made the best aeroplane rise, 500 metres in 10 minutes. Now, the Doves, of course, rise very slow, but as the best performance, I ever heard of, was Perryon on a specially prepared Blériot mono (160-h.p. Gnome engine) in the Vienna 1913 meeting: 2,000 metres in 10 minutes, the figures of ordinary warplanes will be between them.

[One can only ask the Germans to "wait and see" what the best British aeroplane can do in the way of climbing.—Ed.]

"Berliner Tageblatt" of Tuesday, September 22nd brings the following interesting description of a fight in the air between Germany and France:—"For about one hour we had been flying to and fro over Paris without being hit from below, when a French monoplane approached from Juvisy, flying quicker than my biplane. I was forced to try to escape by turning. Meanwhile, my passenger prepared the machine-gun. The hostile aeroplane came nearer and nearer. I tried to rise to 6,000 feet to reach the protecting clouds, but my enemy, whom I did not leave out of sight, rose quicker, and suddenly, 1,500 feet away, I discovered yet two other monoplanes, evidently intending to intercept us.

Now, all depended of presence of mind and quick acting! In few minutes my passenger had made all preparations. I shot at the aviator in front of us—[and the propeller, if it was a tractor biplane, and the other aeroplane was just in front?—H1]—while my passenger flung a gun to his cheek and fired two or three times. Suddenly, the one monoplane, only 300 feet away, dived and fell to earth as a stone. But a second pursuer

was now just above our heads and shot at us with pistols. Close behind the engine the bullets hit the aeroplane's tail [should it be an old Albatross pusher one?—E. H.], when we were fortunately wrapped up in a mist, hidden from the hostile aeroplanes, whose engine noise we heard distinct. When we dived out of the mist again, it was 7 o'clock. To find our bearings we commenced a "vol plané," when little white clouds beneath us suddenly resounded of exploding shell. Thus we were always flying above the hostile artillery fire, which grew violently, every minute I found that my biplane was hit, but I stuck to my route, and did not think the least of that one of these little tapering shells sufficed to kill me. When the catastrophe occurred! A white-yellow fire blew up before me, the biplane trembled, and, at the same moment, my passenger fell back, the blood springing from his shoulder. The inter-plane struts of the left planes had been shot to pieces and the propellor damaged, all caused by one condemned shell. The biplane began falling to earth. By exerting my last strength I managed to steer on to a wood, where the biplane splitted and crushed the heads of the trees; but the fall had been parried partly. I got violently beaten and was taken faint. When I awoke I saw my passenger lying on the wood-ground, surrounded by militia soldiers. The German advanced guards had understood the falling biplane to be a German one and had hurried to the rescue of the crew.

After the French attacks on Mulhausen, some fear might be felt for the big "Aviatik und Automobil A/g" in that city, but with usual accuracy and forethought the Ministry of War had arranged every detail, as tells "Konstrukteur-Zeitung." As this important aerial weapon factory must be under no possible circumstances left to the French, the director of the Aviatik Co., Georg Châtel—killed later in the Mulhausen fights—received a telegram from the military authorities to the following effect: "Your factory will be transported to . . . this night." In the afternoon a train of 50 wagons arrived, 30 of them were loaded with finished, half finished, and commenced aeroplanes, the rest were filled with raw materials, spare parts, tools and engines. Already the same evening the trains reached its place of destination, where big rooms with electrical equipments were ready, so that the engines had only to be coupled on, and next day work could be continued as usual, and at present 90 of the old works men and a military crew of 150 soldiers turn out 3 aeroplanes every two weeks. Not even the director had known anything of the measure of removing the works to the other side of the Rhine.

German soldiers have in Belgium found 30 aeroplanes, packed up in railway wagons.

The oldest German aero works, "Wright Flugmaschine Gesellschaft" has been dissolved; the twin-propeller biplane had long been almost out of use, and in reality the Wright Co. has turned into the "Luftfahrzeug G.m.b.H.," on whose arrow biplane Bruno Langer established the first duration record of the year.

A Bavarian officer-pilot relates to the "München-Augsburg

Abend-Zeitung" that in the battles by the fortress Belfort and Nancy, the French transported their guns out of the fortress to hide the places from where they fired, but that the German aviators found them all out.

In the Niederneuendorf aerodrome, which is possessed by the big A.E.G. Company, its erecting shop has been burnt.

The German aeropaper, "Flugsport," October 17th, brings of interesting news, among others, two lists that represent the extremes of the war: the death and the glory: the list of the losses and the distinctions of the aerial troops. The latest list of the lost aviators contains the following names: Oberlieut. Neumann killed; Lieuts. Furstenau and Ernst killed; Lieut. Hesse interned in Holland; Lieuts. Schmickaly and von Lyncker taken prisoners; Lieut. Schelten Peterssen killed; Capt. Heinrot wounded; Oberlieut. Steindorf wounded by an accident; Lieut. Riedel slightly wounded; Lieut. Wulff wounded; Reservist Lehrke killed; Gefreiter Mattis killed; Chauffeur Zundorf wounded; Aviator-Sub-Lieut. Haase wounded; Oberlieuts. Viedeck and Krauss taken prisoners; Capt. von Hemskeerck wounded; Aviator Ligus killed; Lieuts. Schwab and Heising wounded; Sub-Lieut. Frensch wounded; Reservists Fritsche and Buschhauer wounded; Aviator Probst wounded; Lieuts. Schmidt and Winterfeldt killed on a flight by Lawica at the Eastern frontier—their aeroplane was caught by a gust, thrown to the earth, and they were killed by the smash.

The following military and civil aviators were awarded the Iron Cross:—Caps. Bahrends and Stellbrinck; Oberlieuts. Bernard, Strehle, Knackfuss, Nordt, Dietze, Bufe, Hempel, Schweickhard, Pretzell, Friedberg, Bullrich, von der Decken, Stahl, von Dickhut-Harrach, Freiherr von Thuna; Lieuts. Schinzing, Vierling, Sendel, von Winkler, von Hiddessen, Spang, Cless, Muller, Buhler, Logan, Frank, Heimbach, Hartmann, Schlemmer, Böhm, Schwarzenberger, Freiherr von Esbeck, Krause, Buth, Count Baudissin, Brederlow, Wentseher, Vizefeldbebel Grunewald; Sergeant Backhaus; Sub-officer Haller; Gefreiter Pietsch; aeroplane manufacturer Oberlieut. Harlan; and Herr Stiefvater, who was even appointed a lieutenant before his accident on October 5th, though he had never served his military duty.

The German newspapers announce in the "List of the Lost" that the aviator Otto Stiefvater was shot down together with his observator, Lieut. Pappe, and both were killed on the spot. Stiefvater, now chief pilot of Prince Sigismund's monoplane pictured in THE AEROPLANE No. 9, side 194, which he flew, among others, in the recent three-corner's flight, piloted former the Jeanin steel-dove monoplane, on which he on September 16th last year made a flight of 1,170 km. in 13 hours, quite over Germany from Freiburg via Gotha to Königsberg, thereby winning the 10,000 marks prize of "The Flugspende." Having not served his duty as a soldier, Stiefvater entered as a voluntary aviator when the war began, and just as Hellmuth Hirtl, for his keen patrol flights, was promoted to a Lieutenant and awarded the Iron Cross.



Some of the Sopwith Aviation Co.'s Workers—who hold the record for the biggest subscription from any one firm to the R.N.A.S. Comforts Fund. Still the figure might be beaten by bigger firms.

Our Patron Saint.

Apropos "Ilia Mourametz," a correspondent at Dartford, signing himself C. J. B., sends a medal, evidently produced in France, bearing on the obverse a presentation of Elijah the Prophet travelling heavenwards in his fiery chariot, and on the reverse sundry aircraft of curious design with the motto "Saint Elie protège nous." This correspondent explains that "some time ago the late Pope recognised Saint Christopher as the patron saint of motorists, and in France and Italy and Spain medals of that saint were quite common." He continues:—"No doubt the idea of Saint Elias as patron of aviation originated in France also, and may extend to Catholics in other countries. He was certainly the first flier whose authentic records have come down to us. He holds the altitude record, and considering his chariot is usually represented as of only about two horse-power, he deserves even in our day to be reckoned something of a flier. I say this, of course, without intending to be irreverent, and merely to substantiate his claims to be, as he is represented on the medal, the patron saint of aviation." Many thanks to C. J. B. for the medal.



Durability.

Some little time ago Cellon, Ltd., sent the writer a piece of the fabric off Mr. McClean's Short biplane which he flew to Khartoum. The machine was recovered because of the damage done to the planes in packing, and not because of perished fabric. After standing sea-air during its tests off Sheppey, the fabric then suffered the extreme heat of the journey up the Nile, and since then the "dope" on this piece has withstood a couple of months of the still more trying atmosphere of a newspaper office without showing the slightest inclination to crack or peel off or rot the fabric, which appears as good as when new. Taking it all round it is high testimony to the excellence of Cellon.

The Northern Waterplane School.

The two photographs, published in this issue, of the 80-h.p. "Pusher" waterplane built by the Northern Aircraft Co., Ltd., on Windermere, give a better idea of its structure than those hitherto seen. The appearance of the machine has been somewhat altered recently by the enlargement of the tail fin, which now takes the form of an isosceles triangle, with the divided rudder mounted on its base. The lower photo shows Mr. W. Rowland Ding with a lady passenger "steaming" out from the slipway, and above is the machine alighting in front of Belle Isle at the termination of the same flight. It is the intention of the company to fit this machine with twin floats so as to remove the need for side balancers.

An Opportunity.

One notes that a big firm in Newcastle advertises this week for "a man used to Royal Aircraft Factory methods." At first sight the phrase suggests sinister designs on the part of our good friends in the North, but on reading further one sees that reference is made to "progress work," so evidently there is no opening for the regular type of R.A.F. "hands-in-pockets" workman. The desire, then, is evidently for a man so used to R.A.F. methods that he is not likely to permit them.

Accelerating Output.

Firms who are endeavouring to accelerate their output of aeroplanes will do well to remember that they can increase

their supplies of wood parts rapidly with the assistance of W. G. Evans and Sons, William's Mews, Stanhope Street, N.W. This firm is used to handling wood of the finest quality, and is thoroughly well equipped with machinery and trained hands to turn out the most intricate woodwork.

In addition, the firm keeps in stock all kinds of wood which is likely to be used in the construction of aeroplanes, so that either raw material or finished parts can be procured there.

Southampton District.

A new Sopwith tractor (Sunbeam motor) was out during the week flying well. On alighting from its first trip the port float struck something in the water and was stove in, so that the machine came back with the pilot on the starboard wing-tip and a motor launch in charge. Later on Mr. Mahl took out a small very fast Sopwith tractor (Gnome engine). This should be a valuable addition to the Navy. Bad weather and consequent bad water has prevented as much flying as usual lately, but various Sopwith and Avro tractors and Wight and Farman pushers have been about practically every day.

The Sussex County Aero Club.

Owing to the inclemency of the weather, the finals of the Military Sports, fixed for November 28th, and the prize distribution had to be postponed until next Saturday.

Members of the Club will regret to hear of the death of a highly esteemed member, Captain F. H. Mahoney of the 1st Cheshire Regiment, who died in action on October 22nd last, leaving a widow and two young children, to whom the Committee desire to express their condolences.

(Signed) WILLIAM C. LITTLEWOOD, Secretary.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Windy	Fair	Windy	Fair	Windy	Wet	Wet & Windy
South Coast ...	Windy Cold	Fine	Rain	Windy Wet	Windy Wet	Windy Wet	Dull Windy
East Coast ...	Windy	Fine	Fog to Fine	Fine	Windy Wet	Half Gale	Half Gale

Eastbourne.—AT E. A. C. SCHOOL.—Instructors: Messrs. F. B. Fowler and R. C. Hardstaff. Pupils with instr.: Flt. Sub-Lieuts. Barnes, Pullin, Travers, Teesdale, Openshaw, Wood, Sibley and Gerrard. Machines: E. A. C. biplanes.

Hendon.—AT THE GRAHAME-WHITE CO. SCHOOL.—Instructors: Messrs. Manton, Russell, Shepherd and Winter. Pupils with instr.: Prob. Flt. Sub-Lieuts. Barnes, Breese, Dalison, Driscoll, Field and Livock straights. Straights alone: Prob. Flt. Sub-Lieuts. Field, Cooper, Wakelet, Watson, Young and Mr. Greenwood. Prob. Flt. Sub-Lieuts. Cooper and Wakeley half circuits alone. 8's and circs.: Prob. Flt. Sub-Lieuts. Bray, Groves, Hodson, Price and Watson. Certificates taken during week: Prob. Flt. Sub-Lieuts. Bray, Groves and Hodson. Machines: Grahame-White propeller biplanes.

AT THE BRITISH CAUDRON SCHOOL.—Instructor: Mr. R. Desoutter. Mr. Williams, rolling, Flt. Sub-Lieut. Bird and Mr. Stevens right and left-hand turns and half circuits, Mr. Barfield circuits and 8's. Machines: Two 35-h.p. Caudrons.

AT THE LONDON AND PROVINCIAL AVIATION CO.'S SCHOOL.—Instructors: Messrs. W. T. Warren and M. G. Smiles. Strts. and rolls alone: Messrs. Moore, Abel, England, Derwin, and White. Machines in use: L. and P. tractor biplanes.

AT THE BEATTY SCHOOL.—Instructors: Mr. Geo. W. Beatty and W. Roche-Kelly. Pupils with instr.: Messrs. Virgilio (15 mins.), Gardner (48), C. Leeston-Smith (30), W. G. Moore (45), J. D. Newberry (15), Anstey-Chave (38), G. Donald (35), G. Perrot (5), J. F. Roche (25), B. de Meza (15), J. V. Miller (15), and P. E. Cornish (15). W. G. Moore took his certificate. During his height test he attained an altitude of 2,000 ft., making a very fine spiral from 1,600 ft. and finishing with a perfect landing. Machines: 50-h.p. Gnome biplane and 40-h.p. Wright biplane fitted with "dual" controls. M. Edouard Baumann has now returned from Switzerland and will immediately take up his duties as pilot.

AT THE HALL SCHOOL.—Instructor: Mr. J. Rose. Pupils, straights alone: Lieut. Sandys (12), Mr. Lloyd Williams (10), Mr. W. Connodine (7), all showing good progress. Machines: Hall tractor biplanes.

MISCELLANEOUS ADVERTISEMENTS

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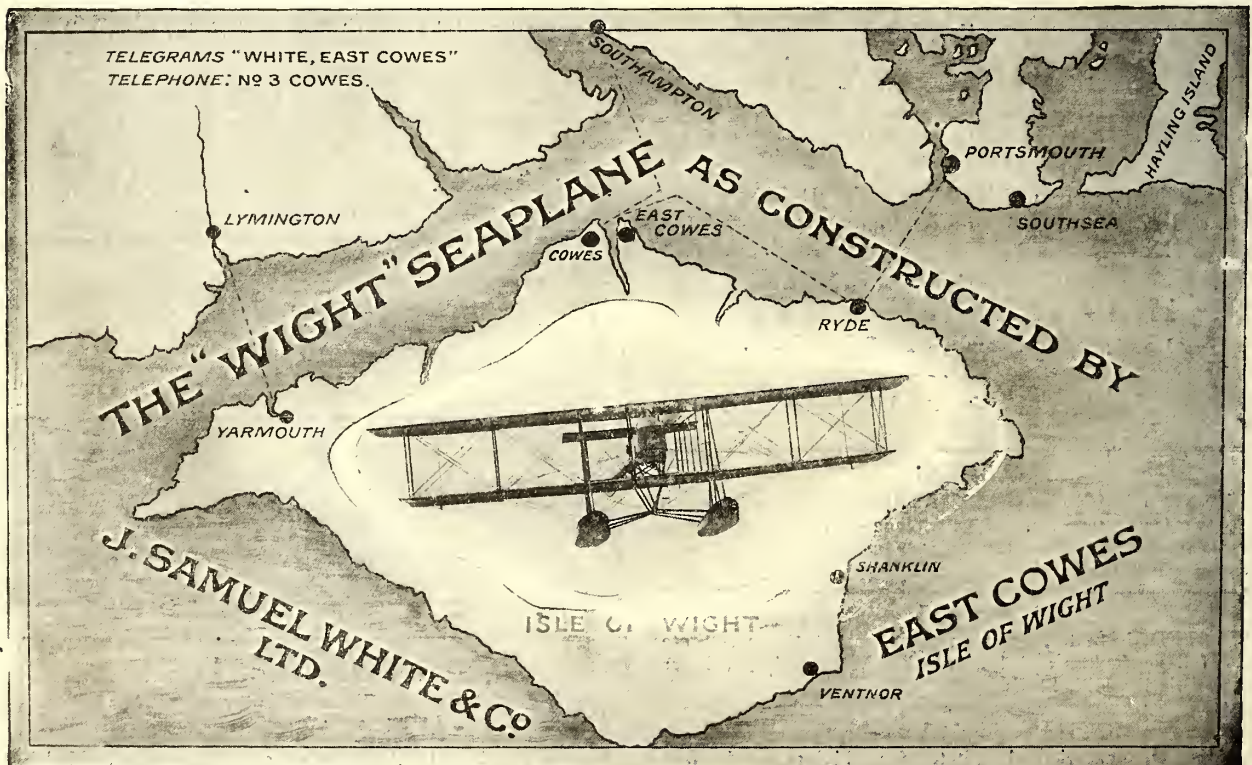
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AS A NEWSPAPER.

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No. 24

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America and the War.

In the Island of Valentia, off the coast of County Kerry, which is the limit of the European War Area, and where the trans-Atlantic Cable comes ashore, the local inhabitants inform the enquiring tourist that "the next parish beyant there is America,"—"beyant there" being vaguely the direction of the setting sun. America is a curious institution. Geographically it is two continents separated by a canal—except when the canal falls in and makes it one again. Colloquially it is merely a portion of itself, which is politically the United States of America and ethnologically a menagerie of all the races under the sun. However, fortunately for us at present, the dominant race there is that mongrel mixture of Teuton, Celt, Scandinaviau, and Latin which is commonly called Anglo-Saxon, and it speaks the language called English, albeit on occasion through a different feature of its face.

There is also a large and apparently indigestible lump of the German section of the Teutonic race, which is sufficiently solid to have got itself thoroughly disliked, and this seems to account for the attitude of most Americans towards the present war,—an attitude neatly summed up by an American paper which remarked very early in the proceedings, "We are so darved neutral in this country that we don't care a damn which country licks Germany."

As a result quite a number of Americans of the proper sporting type are anxious to take an active part in the war on our side. It appears that thousands are visiting Canada as peaceful neutral tourists and are there enlisting in our Canadian contingents, for the neutrality of the United States prevents the raising of a separate American contingent. Also, we in this country will not enlist citizens of neutral countries as such. That is part of the price we pay for our English conscience. A buck nigger born twenty or thirty years ago in some wild part of Africa annexed by us five minutes before the war broke out is a British subject and may slay Germaus as a member of the local native levies, but if Sir John French or Lord Kitchener had a first cousin who was born in the United States and brought up and educated in England that cousin could not enlist in the British Army without lying about it, and pretending that he was a British subject, and he could not hold commissioned rank even though he had all the military ability of his British-born relative. The Freuch are more sensible, they have had their Foreign Legion for generations, and now they have distinct American and Italian Brigades enlisted since war began. But then France has not got the English conscience.

If the Archangel Michael, who is presumably a gentleman, and knows something about war and flying, came and applied for a commission in the R.F.C., he could not have it unless he lived in Great Britain long enough to qualify for his naturalisation papers, but there seems no objection to giving R.N.V.R. commissions to Hebrew financiers of distinctly alien enemy origin if they have lived here a few years.

American aviators are in the same boat as the rest of their countrymen, and may not help us, except as civilian testers of aeroplanes or instructors at civilian

schools, though several would, it is certain, be only too pleased to fly on active service if they were allowed, and some of them are not only as good fliers as many of our best pilots, but are more fitted mentally, morally, and socially to hold commissioned rank than are some of the people who have been given commissions by those controlling the Naval and Military aeronautical services of this country.

One such wrote the other day: "Aviatiou in this, my native land, is like a Zero with the ring rubbed out, but over this I am forced by patriotic sentiments to draw a veil. Do drop me a liue and tell me if you think the War Office conscience is perhaps less acute than it was in August. Translation—Do you think I would stand any chance of getting into the R.F.C. if I were to come to England now? You see there are a lot of germaus in America, but it is not legal to kill them. I am feeling quite strong and very auxious to do anything unpleasant to any german." Incidentally he insists on spelliug Germaus with a small "g," intimating that they are a type of germ of which the World should be disinfected.

He is a cheery soul, and a fine flier, but, of course, one could only return to him the official reply that "Commissions in the Royal Flying Corps are only granted to British subjects and to naturalised British subjects." Yet perhaps if he had chosen to forsake his own country for ever he might by uow have been a British officer, and, such is his experience of warfare and aviatiou in various parts of the world, and such is his aptitude in handliug men, that he would have made an uncommonly good one.

However, that is the price we pay for a self-defending Empire. We may employ native troops speaking a dozen or more different languages, provided they are born or are annexed under the British flag, or we may employ enlisted troops from independent but so-called tributary States. Our young men may serve the Empire by staying at home in ease, watchiug football matches on Saturday afternoons, drawing double pay for working for armament firms on Sundays, and overtime at wages and a half every day except Saturday (sacred to football and cinema palace). They may even help still further by coutributing as much as a shilling or sixpeuce once in three months to the funds opened to provide comforts for the men at the front who work under impossible conditions on the products of the factories which pay them twice the wages they have ever earned, or are ever likely to be worth when the war is over. They may keep the Empire's heart up by paradeiug on Saturday evenings along their local maiu street, decorated with O.H.M.S. badges to show they have not shirked enlisting, but are saviug and serving their country in another and better paying way. But the British Empire must never employ mere mercenary troops, not even if they are all blood relations to British born and bred subjects of the King. Consequently, our American cousins can only see the war if they are rich enough to equip a volunteer ambulance show and to get permission to use it, or if they enlist in the French or Russian, or Belgian, or Serbian, or Portuguese service, or if they do what the majority of Englishmen do, go and see it in a cinema film.

Practical American Help.

However, our excellent relatives in the States can, like so many Englishmen, help the Allies, and make a handsome profit, by supplying war material. Being a strictly neutral nation no one could reasonably object to their supplying Germany and Austria and Turkey as well, if they could. Unfortunately, from the point of view of some American business men, the British and French Fleets form quite an effective barrier to such trade. Therefore, apart from personal feelings, it pays Americans to supply the Allies. Contraband of war is apparently only contraband when it is held up by a hostile ship, and as that interference is not likely to come from German warships, America can go on happily supplying guns, small-arms, ammunition, "automobile trucks"—otherwise motor wagons—aeroplanes, or anything else that may come in handy and show a good profit.

Despite my young friend's remark about the state of aviation in America, there are certainly three or four excellent types of aeroplanes and engines made in that country. Their performances show that they compare favourably as flying machines with those turned out by our own or the French factories, and surpass the best efforts of the Royal Aircraft Factory. Whether they equal our best British aeroplanes in structural strength and in workmanship remains to be seen, but certainly the requirements of the aviation department of the U.S. Army are quite as great as anything the R.F.C. demands.

Some few weeks ago I had the privilege of a long talk with the chief of that department of America's defence force, a keen soldier who knows what war is, and who has more than a working knowledge of aviation. With him in control American aeroplane makers will never again plant shoddy machines on the U.S. Army, and the appalling percentage of deaths in that service will soon drop to a reasonable figure—provided he has a free hand and is not balked by politicians. It is therefore reasonable to assume that American makers whose machines pass his tests are at any rate good enough for the use of the Allies, and here is just where Americans can really help.

Causes for Complaint.

Our own aeroplane manufacturers are simply full up with orders, and so are our engine manufacturers. There is therefore no cause for the "Trade" to complain if foreign machines are imported. Except, of course, that some firms have a legitimate cause for complaint in the fact that their output is hung up and their works managers are befuddled by orders for machines to the designs of the Royal Aircraft Factory in which alteration after alteration has to be made owing to mistakes in drawings, faults in the uses of materials, misplacement of parts, errors in dimensions, and so forth, which would disgrace a pupil undergoing a "correspondence" course of instruction in engineering by post.

Such firms may well complain that they could turn out three machines of reasonable design and of higher military value, to drawings made by competent designers, for every one they can build under the existing system. That they should not be permitted to do so is not only disgraceful, but is a definite danger to the country in that it hampers our supply of effective aeroplanes just when the output should be greatest. Further, while various British firms are turning out efficient engines of modern type, it would be interesting to know why the officials of the R.A.F. specify in their aeroplane designs an engine of obsolete type which can only be obtained in France, and why orders for British-built engines of French design have been given to firms which have never produced a satisfactory aeroplane engine of their own.

Still, even if some strong man with a real knowledge of aeroplanes took charge of the whole business and

put things straight, our output of aeroplanes could never be too big for our needs, for too big an aeroplane fleet in the present war is an impossibility. We can always produce more pilots, and the only other limit is the supply of petrol and oil, both of which are practically unlimited in quantity. Therefore, if America can supply us with aeroplanes of the right sort, by all means let us have them. And if, after the war, our then Government has the sense to protect British industries, it will be an easy matter for American firms to start works over here which will bring fresh capital into the country and will employ British labour.

Supplies for Our Allies.

Meantime, American aeroplanes may be very useful to others than ourselves. France can do with more aeroplanes than she can make, and so may well be glad to buy from America. Serbia would probably like some aeroplanes, but she would need pilots also, and it does not seem at all likely that any civilised aviator would deliberately throw in his lot with the Serbian Army as it is at present existing.

In six months' time, or perhaps even in three, Rumania will probably chip in, and it should be possible to get supplies to her by then via Salonika across Bulgaria, or even direct through the Bosphorus. There or thereabouts in point of time Italy is fairly sure to make her effort for "Italia Irredenta," and though Italy has several good aeroplanes of her own, her output is not big enough for her needs, so here is another outlet for American industry.

Bombs for Berlin.

But the most fascinating proposition I have struck yet is a combined scheme for supplying aeroplanes to Russia and worrying Germany at the same time. The notion is the outcome of several recent happenings. Firstly, Russia, like the rest of the Allies and their "neutral" friends, wants more aeroplanes than she can make, and America is her only source of supply. Secondly, the return distance covered in the Friedrichshafen raid was far enough to have gone past Berlin from the French frontier if it had been a straight away trip. Thirdly, it is said that the sporting French aviator Poulet offered lately to take the 80-h.p. Caudron on which he flew for 20 hours without stopping, not long before the war, and go and drop bombs on Berlin. The machine is not a fast one, being designed purely as a weight-lifter, so he reckoned on about 12 hours for the trip in calm weather, but added that if he found a West wind all the way he would go on and land in Russia. He reckoned to fly at about 15,000 feet over Germany, so as to escape being seen. It was quite a nice scheme, but it might be bettered, and made still more useful.

The logical outcome of the three ideas indicated above is to send American aeroplanes to the Eastern Frontier of France—or the Easternmost point occupied by the Allies in Western Europe—where they would be taken over by Russian pilots and flown to Russia's Westernmost point, passing on the way across Germany, and dropping bombs on Berlin, Dresden, Leipzig, or any other city of political importance on the way.

I use the phrase "political importance" advisedly, for the effect of the bombs would be more moral than material. They would be taken as all in the day's work at a fortress whereas they would be much more convincing in a political centre as a means of panicking the mob. The moral effect of the recent raids was shown by the excitement in Berlin over a mere rumour of bombs being dropped in Krupp's works at Essen. The effect of bombs in Berlin itself may be imagined, for the Berlin mob is more hysterical than even a London mob—as instanced by the scenes of disorder when Pégoud "looped" at Johannisthal.

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again; the Russian pilots can get round to France fairly easily via Vladivostok and the United States, so long as they do not give themselves away and get themselves interned. Later on they will probably be able to get through Galicia and Serbia and Italy, which is handier than either. Once in possession of their machines in France they can do a little bomb-dropping practice in Western Germany before starting on their real journey.

For the big trip itself they must wait for a direct West wind, or at any rate for a steady calm spell. A proper system of telegraphic communication must be established between the Western Russian front and the Eastern French front, either by wireless or by round-about cable, to tell the pilots how the wind is in Russia. When the weather suits at both ends of the wire they may fairly safely make a start.

An ordinary map shows the distance from Epinal to Lodz via Berlin as roughly about 600 miles. With an 80-mile an hour machine that means about $7\frac{1}{2}$ hours' flying. A machine which will do that speed with a

The R.N.A.S. Comforts Fund.

The contributions in cash and kind for the above fund have been very gratifying this week—in fact, the record has been broken. The large consignment of "woollies" sent by Lieut.-Commander Graham, R.N., of T.B.115, who says he feels that the R.N.A.S. have as much need as the sailors, is typical of the kindly feeling between the branches of the Royal Navy.

Mrs. Sueter has sent a large case of comforts to the Naval Airship Section, under Colonel E. M. Maitland, on the Continent. A letter from Flight-Lieut. Hayland Wilson, R.N.A.S., anticipates the nature of the reception this case is sure to get. Writing to Mrs. Sueter of a former consignment, he says:—"The three cases all arrived quite safely, and were distributed among all ratings, and I wish you could have heard many of the remarks, it would in part have repaid you for your kindness."

The additional cash contributions to date are:—The Earl of Camperdown, £10; Mr. G. Holt Thomas, £10; the Sopwith Aviation Co., Ltd. (2nd contribution), £9 18s. 7d.; Capt. E. C. Bass, £5 5s.; Mrs. Holt Thomas, £5; Miss Biddlecombe, £5; Mrs. de Courcy Hamilton, £2 2s.; the Cedric Lee Co. (2nd contribution), £1 19s.; Mr. R. Steinbach, £1 1s.; Mr. Owen Mocatta, £1 1s.; Mme. de Guérin, £1; Messrs. Mann and Grimmer (employees, 5th contribution), 15s.; Miss W. Morris, 10s. 6d.; Mr. Alex. Pender, 10s.; Woodworkers, Aeroplane Department, Vickers, Ltd., Erith, 6s.; Mr. E. C. Burden, 5s. Total for week:—£54 13s. 1d.; grand total to date, £213 1s. 3d.

Contributions should be sent to Mrs. Sueter, The Howe, Watlington, Oxon.

Super-Zeppelins.

The "Express" of December 4th says:—

"The 'Vossische Zeitung,' of Berlin, credits the 'Daily Express' with a statement that seven great and astoundingly armed airships are being built at Genoa for the British Government, and that they are now on the way to England.

"The Berliners are evidently mixing up the report we had from our Geneva correspondent on the Dreadnought Zeppelins under construction at Friedrichshafen."

[It is possible that the "Express" is also wrong. Rumours well founded or unfounded may be reaching Berlin of the construction of Forlanini airships for the British Government, although, naturally, if such ships are building, they would be contraband of war—also, they may be in process of building in England—as projected long before the war.—Ed.]

A Question of Mileage.

After the R.F.C. had had a couple of months of active service it began to be bruited about that the B.E. biplanes used by the Corps were standing up to the wear and tear of campaigning better than anything else in the Service—and nothing else was within streets of them. Then, a little later, one began to hear that the Avros, which are over ten miles an hour faster than the B.E.s, were standing up better still, and so the Avro is now enjoying a long and thoroughly deserved popularity.

pilot, the necessary fuel, and about an extra 150 lbs. weight of bombs, is quite a simple commercial proposition; in fact, several such already exist, even in America.

If anything is to be done at all the organisation should be put in hand at once, for the sooner systematic irritation by bombs is started the better. As time goes on and the Allies advance into Germany from both sides the distance to be covered will decrease and the aerial raid which would now be an event will become a mere habit, and will be carried on from both sides, but even now the distance is quite within the range of practical politics.

A regular series of dashes of this kind ought to appeal to the sporting instinct of Russian pilots, especially those of the Nestoroff or Agathonoff type, as a business proposition the scheme should appeal to the Russian business man, and as a performance of military value I hope it will appeal to the Russian Great Headquarters Staff, to whom I have the honour to present it.—C. G. G.

Recently, a friend of the writer's, who is not in the least interested in any of the machines named, went to some trouble to discover some facts about the mileage covered, and it then leaked out that the Henri and Maurice Farmans headed the mileage list by a huge percentage on the average mileage per machine over the B.E.s, and that the Avro was also far in front of the B.E. Many of the B.E.s were hardly flown at all, so, of course, they kept their shape, but others went to pieces badly, though in fairness one must state that others stood up very well. Yet many officers judged by the look of the machines, condemning the Farmans because they showed signs of decrepitude after being banged on to the ground over and over again by all sorts of pilots, while B.E.s sat there and merely looked pretty.

Of course, human beings get reputations on equally unfair grounds, but to retain a reputation one has to "make good." It is "work done" which deserves praise, not academic virtues.

Imitation the Sincerest Flattery.

The "Journal" declares that French flying is much superior to German flying, and that "from the triple point of view of offensive, observation, and refitting, the French enjoy an incontestable advantage." This, it asserts, is only right, since, without the Taube, German aviation is but a distant reflection of French skill.

Apropos the above statement, the "Chronicle" of the same date quotes the "Paris Journal" as making the sage announcement that "aircraft builders in Germany have completely given up constructing monoplanes of the Taube type, and are now building nothing but biplanes of designs based on French models." The additional statement that the three most important German builders are turning out fourteen machines a week is not very alarming.

As a matter of fact, the German military authorities practically gave up Taubes a considerable time before the war, and merely used up those they had in stock in the earlier stages of hostilities.

It is difficult to see where the tractor biplanes which are now being used in such large numbers by the Germans bear the mark of French design, as the only fuselage biplanes used to any extent by the French are the Bréguets. The British Avro and Sopwith machines seem to have some claim to be progenitors of the Albatros, A.E.G., Aviatik, L.V.G., and D.F.W. biplanes. Incidentally, certain sportsmen at 166, Piccadilly are making bets as to how long it will take the daily Press to discover the L.V.G. biplanes, which seem to do the lion's share of German reconnaissance.

Certainly the enemy are using a few weird pusher biplanes, which, however, the MM. Farman would hardly consider an undistorted "reflection of French skill."

An Antipodean Air Fleet.

A message from Wellington on November 18th states that the Prime Minister of New Zealand, speaking at Timaru, urged that Australia, New Zealand, and the other British dependencies in the Pacific should establish a flying squadron in the Pacific.

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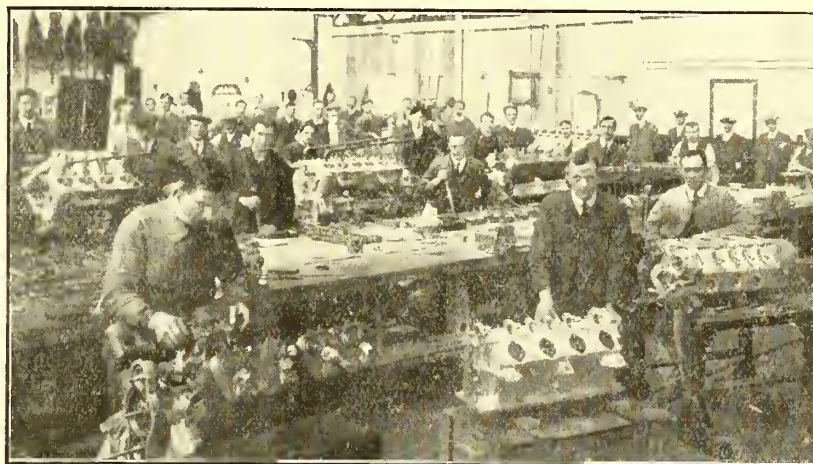
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Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," December 1st, 1914.

ADMIRALTY, November 26th.

ROYAL NAVAL AIR SERVICE.—Temporary Second Lieutenant Brian Stuart Benning, Royal Marines, to be flight sub-lieutenant and to be transferred to the Royal Naval Air Service. Dated November 16th, 1914.

The undermentioned acting flight lieutenants have been confirmed in the rank of flight lieutenant for temporary service in his Majesty's Fleet: Henry Richard Busted. Dated August 3, 1914. Sidney Vincent Sippe. Dated August 4th, 1914. Harry Delacombe. Dated August 6th, 1914.

WAR OFFICE, December 1st.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—The undermentioned temporary appointment is made: Second Lieutenant Arthur V. Bettington, Special Reserve, to be a flying officer. Dated November 11th, 1914.

* * *

A Second Supplement to the "Gazette" of December 1st, published on December 3rd, contains the following military appointment:—

WAR OFFICE, December 3rd.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—Royal Flying Corps (Military Wing).—The undermentioned appointment is made: Frederick Howard Jenkins to be second lieutenant (on probation). Dated November 27th, 1914.

* * *

From the "London Gazette," December 4th, 1914.

The "London Gazette" of November 4th contains the following supplementary list of names of officers and an N.C.O. of the R.F.C. to be added to those appended to Sir John French's Dispatch dated October 8th, 1914 (Supplement to "London Gazette," dated October 19th, 1914):

OFFICERS.

Harvey-Kelly, Lieutenant H. D., Royal Irish Regiment, Royal Flying Corps.

Mansfield, Lieutenant W. H. C., Shropshire Light Infantry, Royal Flying Corps.

NON-COMMISSIONED OFFICER.

Jillings, No. 9 Sergeant-Major D. S., Royal Flying Corps.

* * *

A Third Supplement to the "London Gazette" of December 4th, 1914, contains the following appointment:—

WAR OFFICE, December 5th.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—Royal Flying Corps (Military Wing).—John Theodore Cuthbert Moore-Brabazon to be second lieutenant (on probation). Dated December 2nd, 1914.

* * *

A Fourth Supplement to the "Gazette" of December 4th, published on December 7th, contains the following military appointment:—

WAR OFFICE, December 7th.

ESTABLISHMENTS.—Royal Flying Corps (Military Wing).—Squadron Commander—Captain Gordon S. Shephard, the Royal Fusiliers (City of London Regiment), from a flight commander, and to be temporary major. Dated December 1st, 1914.

NAVAL.

The following appointment was made at the Admiralty on December 1st:—

ROYAL NAVAL AIR SERVICE.—Probationary Flight Sub-Lieutenant W. G. Moore, to the "Pembroke III," for Royal Naval Air Service, to date December 1st.

* * *

The following appointment was made at the Admiralty on December 4th:—

Flight Sub-Lieutenant R. Lord, to the "Pembroke," additional, for Central Flying School, to date December 7th.

* * *

The following appointments were made at the Admiralty on December 5th:—

ROYAL NAVAL AIR SERVICE.—Lieutenants.—D. C. Downing and D. C. S. Evill, both to the "Pembroke III," for R.N. Air Service, as acting flight lieutenants, to date December 4th.

Sub-Lieutenants.—S. Medlicott, to the "Pembroke III," for R.N. Air Service, as acting flight sub-lieutenants, to date December 4th; C. W. H. Pulford and D. Harries, both to the "Pembroke III," for R.N. Air Service, as acting flight sub-lieutenants, undated.

Mate.—F. J. Rutland, to the "Pembroke III," for R.N. Air Service, as acting flight sub-lieutenant, undated.

The following probationary flight sub-lieutenants have been confirmed in the rank of flight sub-lieutenants, with seniority as follows:—I. H. B. Hartford, September 7th; C. G. Verner, K. F. Savory, and M. S. Marsden, all to date September 11th; and all appointed to the "Pembroke III," additional, for R.N. Air Service, to date November 23rd.

Probationary Flight Sub-Lieutenants (temporary).—N. B. Tomlinson and G. C. Colmore have been confirmed in the rank of temporary flight sub-lieutenant, with seniority of September 8th and 11th, respectively, and both appointed to the "Pembroke III," additional, for R.N. Air Service, to date November 23.

Temporary Surgeon.—D. D. Pinnock, to the "Pembroke III," for R.N. Air Service, to date December 3rd.

* * *

The following passage relating to the Royal Naval Air Service occurs in the official dispatch published on December 4th:—

From Major-General A. Paris, C.B., Commanding Royal Naval Division, to the Secretary of the Admiralty. (Sub-enclosure in No. 1.)

31st October, 1914.

Regarding the operations round Antwerp from 3rd to 9th October, I have the honour to report as follows:—

"About mid-day (on October 5th) the 7th Belgian Regiment was forced to retire, thus exposing my right flank. A vigorous counter-attack, gallantly led by Colonel Tierchon, 2nd Chasseurs, assisted by our aeroplanes, restored the position late in the afternoon. Unfortunately, an attempt made by the Belgian troops during the night (5th-6th October) to drive the enemy across the river failed, and resulted in the evacuation of practically the whole of the Belgian trenches."

[It is of interest to note that the aeroplanes were of direct military value and were not merely used for decorative purposes in raids across the frontier. This may perhaps console officers of the R.F.C. who lament that the Navy collects all the limelight without doing the dull but dangerous routine work of scouting which falls to their lot.—Ed.]

* * *

The infant daughter of the First Lord of the Admiralty and Mrs. Churchill was on Saturday received into the Church by the rite of baptism. The ceremony, a private one, took place in the crypt Chapel of the House of Commons, and was performed by Archdeacon Wilberforce, Chaplain of the House of Commons, assisted by the Rev. L. Watson Fearn. The sponsors were Mr. E. Marsh (private secretary to Mr. Churchill), Millicent Duchess of Sutherland, and Mrs. George Dawkins. The two godmothers were prevented from attending personally, and Lady Randolph Churchill and Lady Blanche Hozier, the grandmothers, stood as proxies for them. The child received the name of Sarah Millicent Hermione.

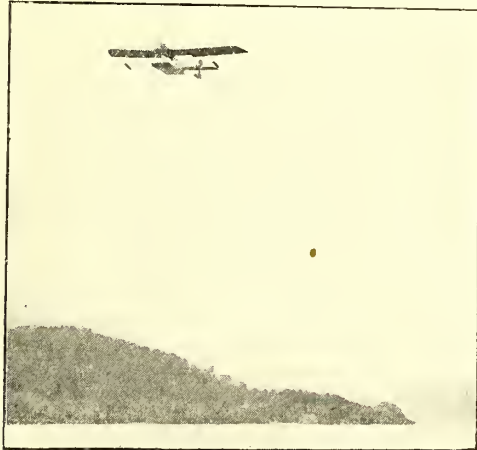
* * *

The "Journal's" special correspondent at Geneva says that a telegram has been received from Munich stating that Commander Briggs, who led the air raid on Friedrichshafen, has been conveyed as a prisoner to the fortress of Ingoldstadt.

[Commander Briggs is doubtless anxiously awaiting the arrival of a troubadour, as did Richard Cœur de Lion, in another German fortress, to charm him with the tuning of a harp, or possibly of a Gnome.—Ed.]

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MILITARY.

The account written by the official "Eye-witness" of the King's visit to the troops in Northern France, published on December 7th, contains the following reference to the Royal Flying Corps:—

"After inspecting another large cavalry force and some artillery and engineer units the King reached the headquarters of the Third Army Corps and had luncheon there. After luncheon the local detachment of the Royal Flying Corps was visited.

"The last visit paid was to the headquarters of the Royal Flying Corps, where, as in other places, the normal routine was kept up. His Majesty addressed the officers and men of the Corps. Machines were being overhauled and repaired in the workshops, while in the aerodrome others were starting out on reconnaissance duty or returning. His Majesty inspected one of the captured aeroplanes and witnessed some special flights, showing the same keen interest in military aviation that he has always evinced. Indeed, the scene of great activity presented by that portion of the Corps present at General Headquarters must have seemed a strange contrast to that other scene at Farnborough some 2½ years ago, when the King for the first time inspected the R.F.C., then in its infancy, the total muster being six officers and two inferior aeroplanes.

"Throughout his tours the safety of his Majesty has been assured by the Royal Flying Corps, whose members have carried out a continuous aerial patrol above the Royal Procession wherever it has been."

* * *

It may be remembered that very early in the war it was suggested that one use to which our aeroplanes might be put would be to distribute truthful literature over the enemy's lines, so as to keep the German troops informed as to what was really going on.

The Germans themselves have used their aeroplanes as disseminators of news of sorts both on the Russian fronts and in France, even to the extent of dropping leaflets inciting our Indian troops to desert. It is therefore satisfactory to hear that our own people are taking a still more sensible course by distributing ordinary newspapers, not only on the German lines but in the French and Belgian towns behind the German lines. This is bound to have a useful effect in that it keeps up the courage of the unfortunate French and Belgian people who are at present under German domination, for it shows them that to a great extent life in the rest of France is going

on as usual, otherwise papers could not be produced and would not contain, as they do, news about ordinary domestic affairs as well as about the war. Among the various new uses of aeroplanes in war to which Sir John French referred in his recent dispatch, this duty of disseminating news is by no means the least useful.

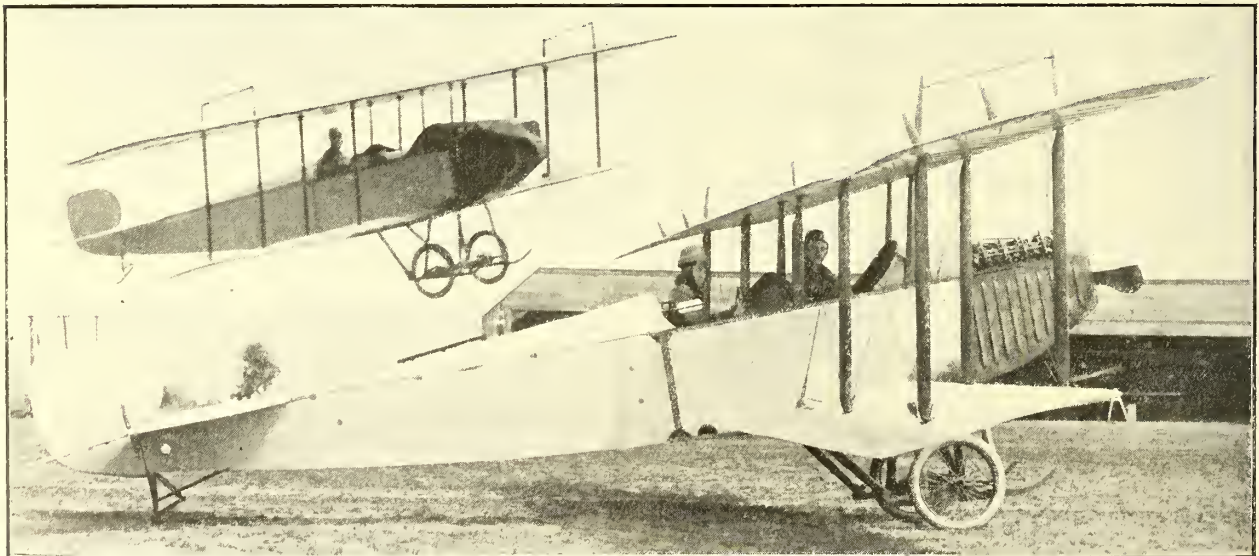
Bomb dropping also has become part of the regular duties of the Royal Flying Corps, despite the doubts which were at first cast on the usefulness of this form of offence. The German dispatch quoted last week states that the effect of bomb dropping is more moral than material, but apparently the bomb dropping by the Royal Flying Corps is sufficiently accurate to cause a considerable amount of damage. The list of German aviators killed by bombs, as detailed by our Danish correspondent, is proof thereof.

The amount of work done by our pilots in this way is considerably greater than one would imagine, as one hears of several officers who have only recently been employed on bomb dropping who manage to get rid of between a dozen and twenty bombs a day, and who have totalled up between 150 and 200 bombs dropped in the past few weeks. The mileage covered by some of the pilots is also very great; several of the pilots can claim to have flown fully 10,000 miles during the three months and a half of active service.

Taking all these duties into consideration, the need for bigger and faster aeroplanes is emphasized, and the folly of ordering machines doing less than 70 miles an hour becomes more obvious, especially when it is remembered that each firm which has such machines on order might by now have delivered between half a dozen and two dozen better machines, instead of one or two to the "official" design.

* * *

An artillery officer writing from the front, says:—"Our present method of warfare seems to be a daily round of digging holes and hiding from aeroplanes. We want some more anti-aircraft guns to chase them away. Our fellows fly much more than the Germans, and are potted at whenever they go up. I saw a B.E. which was plugged at 54 times without being hit. Our aeroplanes signal till we have the target plumb right, and then come in. The Germans drop a light over the target, and the guns search that area. However, they do not do much harm. We had two guns in position for many days, which were absolutely hidden in a very queer but cunning way, and no aeroplanes saw them. They knew whereabouts we were, and searched everywhere. They fired over a thousand rounds into a field on our right, and one in front. They got several rounds near our guns, and others over them, but luckily they



The New Curtiss Tractor Biplane, adopted by the U.S. Army. Speed Range—40 to 85 miles per hour.

changed their minds, and went back to the empty field. They succeeded, however, in damaging the roof of the chateau in which we used to live.

"The Germans seem to be building machines like ours now. We saw one yesterday rather like a Short, and thought it was British at first, and nearly blazed off under its nose. One had to land just behind us the other day with a broken petrol pipe. I went and had a look at it, but the wings had been taken off. It had a 120-h.p. Mercédès engine mounted in the nose of a Nieuport type body, chassis two wheels very wide apart, rather like the old Hanriot-Ponnier, without skids. I have seen D.F.W.s, Rumpler Taubes, and Albatroses, and one or two odd ones.

"The finest reconnaissance was made by a fellow on an Albatros, who made two complete 'chukkers,' dropping about nine lights over various points. He was caught, however, as he had to land far behind our lines for some reason or another. The machine looked as if it were covered with aluminium, although, of course, it was too high to see what it really was made of."

* * *

A Major in the R.A.M.C. at the front writes:—

"I have an interesting personage in my hospital—Lorraine, aviator and actor. I have often seen him act in London in 'Man and Superman.' He was out making a sketch of the enemy's position, and, whilst doing so, a bullet from a shell hit him below the shoulder-blade and traversed the lung and came out just below the collar-bone in front. He was very bad when brought to my hospital, but is doing well now. He is convinced that our treatment of him when he was brought in saved his life, and is correspondingly grateful. I think he will be all right now.

"Commander Samson, officer commanding the Royal Naval Flying Service, came to see him yesterday. He also is famous, and all the newspapers have been recording his deeds of 'derring do' of late. He apparently dashes through the enemy's forces in armoured motor-cars.

"It makes me furious to think that we are all hanging on here to our positions, losing countless officers and men daily, while the British public will not enlist. More men are needed very badly, while they at home go on playing football, etc., as if we about here were not fighting to save an invasion of England. It is simply heartbreaking. It is a pity that the Germans do not land troops on our shores, just to wake England up to a true realisation of the position."

[With the last sentiment one cordially agrees. Apart from that all will be glad to hear that Mr. Lorraine is doing well. Incidentally it is peculiar that one Service never learns the correct titles or functions of the other—e.g., the reference to Commander Samson's position and service.—Ed.]

Apropos Mr. Lorraine's wound, it is reported from another source that the machine he was flying disappeared into a cloud, and that the German guns then ranged on the cloud, and hit the machine when it came out, luckily doing only slight damage. It is not clear, however, whether he was wounded on this occasion, or afterwards.

* * *

A Captain in the Army Service Corps, writing home on November 19th, says:—

"Every morning for five days previous to this we had aeroplanes trying to drop bombs on us. They all fell within 50 yards' radius from where I was standing. Seeing the aeroplane coming, then seeing it bang above one waiting for the bomb to drop, was no pleasant ordeal.

"The comparative smallness of effect also was curious. In five days we lost only five horses and five men of the transport, and yet every bomb dropped among us, and one bomb wounded six Frenchmen who were in a hospital at one end of the field. We had altogether about a dozen to fifteen dropped at us; but these experiences are so very feeble when compared to the appalling things the fighting troops have had to endure that one hardly likes to tell them."

[Nevertheless, when are we going to have enough fast and powerful aeroplanes to make it impossible for German aeroplanes to approach our lines?—Ed.]

The following is an eye-witness's account, dated November 22nd, of the dropping of a bomb on the hospital at Bailleul:—

"We had a bomb here yesterday. I heard it fall, and went out to look and saw the German aeroplane sailing away. It fell into a portion of the clearing hospital, about 150 yards from here. The hospital was in a college with a chapel attached to it. The room the bomb fell in was a library, one-storeyed; it came through the roof and ceiling and burst where there were only two sick or wounded and two orderlies. It killed one man and wounded two and made hay of the library. I went and had a look at it. The ceiling was all torn to ribbons; every window near was smashed, including the stained-glass windows of the chapel, which were on a level with the roof of the library; the stove pipes, which were brought down, were pierced with bullets and fragments; the walls had many marks on them, but a large crucifix on the wall was absolutely untouched. When I went in an old priest was examining the books in the windowless bookshelves and an old nursing sister was shaking her head as she examined the blankets and remains. It is lucky it did not fall where it was probably intended to, on the headquarters of one of the Corps or in the square full of motor-lorries and people."

* * *

The story related by the correspondent of the "Times" last week, to the effect that a German pilot had landed in the British lines unhurt and simply because he had lost his nerve, is slightly modified by a similar but very different story related by a British officer. It appears that one of our pilots with an observer met this German machine and chased it, the British machine being faster than the Germans', which was hit here and there. Whereupon the German pilot wisely decided to come down. On landing in the British lines the German machine, with its pilot and observer, were taken prisoners, and the Royal Flying Corps afterwards sent out and claimed them as their property, in consequence of which the machine and prisoners were handed over to the R.F.C.

The incident reflects more credit both on the R.F.C. and on the German flying corps than if the German pilot had simply landed through loss of nerve as was alleged. Apparently the British machine was hit once or twice by the German's passenger, and consequently the Flying Corps can claim that the German was captured in a fair fight and the German can claim that he only surrendered when he found that he was altogether outclassed.

* * *

Lance-Corporal W. H. Simmonds, of the Transport Section, London Rifle Brigade, writing to a friend at home, says:—
"We are billeted in a barn behind the trenches, and while writing this letter aeroplanes are moving about almost as thick as bees in a hive.

"We have been watching the Germans shelling two of our aeroplanes, and though they fired forty shells they did not get a hit. They had better luck, however, with our fine slide on the pond, for a 'Jack Johnson' shattered the ice, at the same time setting fire to the farmhouse."

* * *

Damaged officers of the R.F.C. are warned to be careful in their choice of travelling companions. The following is attributed by Mr. A. Beaumont of the "Daily Telegraph" to an officer to whom he apparently introduced himself, despite the notice, "Compartment Réservé" on the window of his carriage:—

"I have made about fifty flights; sometimes 5,000 ft., sometimes 8,000 ft. in the air; gratified quite as often with 5,000 or 8,000 rifle shots fired at me. Sometimes a whole army seemed to be aiming all its batteries up at the sky. It was like hell below, but when 8,000 ft. up I felt fairly safe. Their blooming racket did not disturb me then. It did, however, when we were lower down. Then it was a toss up whether the next bullets would not rip all our canvas to shreds or strike a leak in our petrol tank. Still, there was no time to think of all that. When the bullets came too near we knew that we were flying too low, and a move of the lever soon sent us sailing out of immediate danger."

So much for general experiences. The time he was injured the officer admitted that he had been flying dangerously low.

But it was required by the service, because they were on a special mission, and could only see by coming closer to the ground. "A bullet hit one of the stays, and smashed it; a dozen others tore holes in the canvas; the motor suddenly stopped, and I had to make a descent in volplané towards our lines. I never expected to do it, but it seems I succeeded all the same.

"What really happened others will have to tell. I was unconscious at the time. All I can say is that we were within about 200 ft. of the ground when our machine turned upside down. I am told it was pretty badly smashed, and that I had my foot stuck under the motor. My comrade was not much injured. I came to in the ambulance tent, and felt a severe pain from the right ankle up to the knee. But no bone had been broken. Still, I cannot walk, and I suppose I shall be laid up for a fortnight or so. By the way, I wish you could get a quiet cabin for me on the boat."

I did get a quiet cabin for him, and I think few ever deserved it as well as he did. Just as he was carried on board on a stretcher, an English lady could not help bending over him and kissing him on the cheek. "You will be home soon with your own," she said, and he looked at her and smiled.

FRANCE.

It was officially announced in Paris on December 6th that French aviators had thrown bombs on the aeroplane sheds at Freiburg, in Breisgau (24 miles south by east of Colmar, in Alsace).

* * *

From a French official communiqué November 22:—"Our artillery in the region of Soissons destroyed several German foot-bridges; in the region of Reims it has destroyed an Avatik aeroplane and put out of action several batteries."

* * *

It is good news to hear that the Caudron biplanes are doing excellent work with the French Flying Corps. The better part of a thousand of them are now on order, most of them 80-h.p. Gnomes, to be delivered to the French Army before the end of March next.

The Caudron biplane has distinguished itself highly in the war, chiefly in co-operation with artillery, by its durability and its climbing and gliding powers. It is stated on reliable evidence that recently a Caudron pilot succeeded in keeping a standard 80-h.p. machine of the new stream-lined type in the air for almost 20 minutes, after stopping his propeller at 1,200 feet, while flying with a passenger. Further, the Caudron machine is so nearly inherently stable, and is yet so controllable that it is a singularly safe vehicle for the less skilful kind of pilot.

A friend of THE AEROPLANE who was in Paris last week states that he saw M. Chanteloup alive and well, which will be good news to those who have admired the little man's skill.

* * *

A note from a mutual friend in France relates a very fine action by the Caporal-Aviateur Louis Noël, late of Hendon. Somewhere about November 26th, M. Noël was in the town of Soissons shopping when a shell burst and blew a hole in the wall of a house a few yards from the car in which he then was. Although there was every probability of another shell falling practically in the same line within a few seconds, and though the house looked like falling down, Noël rushed into the hole made by the shell and assisted the four wounded inhabitants of the house, two of whom were women, to escape, while the other people in the vicinity ran for cover.

The shell was intended for the cathedral, which is being shelled every day, and is now a ruin; every window has been broken, and much masonry has been brought down. Unfortunately for the last week or two the weather has been so foggy and the clouds have been so low that it has been impossible for the Allies' artillery to locate the battery which has been doing the damage.

* * *

A most interesting letter from M. Pierre Verrier to a friend in London states that he is now well on the way to recovery,

but that he is not likely to be walking without external assistance much before Christmas. The series of operations performed on his ankle have caused considerable attrition of the muscles and stiffness of the ankle. Also the swelling of the foot has not yet quite disappeared. The fact that he is likely to be cured thoroughly reflects the greatest credit on the doctor in whose hands he now is.

M. Verrier says that he has now tried up his crutches properly "à la Farman," and consequently is able to execute "virages brusques," and other exciting manœuvres, with their assistance. He is anxious to rejoin his escadrille, so as to leave his visiting card in the form of bombs on the Boches. He is most enthusiastic about the raid by our three British Naval aviators on Friedrichshafen, which he describes as "absolutely admirable, and worthy of the pilots who have carried it out."

* * *

The following is an extract from a letter dated November 21st, received from Lieut. Dollfus, Chasseurs Alpins, on the Aisne:—

"We were finishing a trench on a hill, when we suddenly heard the noise of a Taube. I instructed my men to keep perfectly still, as when aviators are at a great height they can only recognise the presence of troops when they are moving. The Taube was coming from the German lines and was making for our rear ones. A moment afterwards a very large biplane passed over our heads in the same direction. After about five minutes we saw the Taube returning at full speed towards the German lines, and the biplane, which evidently was French, chasing it at a tremendous speed, about 50 metres higher and gaining rapidly.

"The two must have been firing at one another, and at a certain moment, finding probably that the target of a man, three-quarters hidden by the armoured seat, was too small and too uncertain, the French aviator, by a most admirable and courageous manœuvre, dived straight down, passed under the Taube, and fired at the Boche's motor. The spirit tank certainly was struck, as immediately a huge cloud of yellow smoke marked the track of the Taube. The biplane then turned round to come back to our lines, and the Taube, with the motor stopped, began to descend in a 'vol plané' towards the German lines, continuing to belch forth heavy fumes. We saw it land on the hills facing us, without knowing whether it had been able to reach its own lines. In the evening we heard that it had fallen just between our lines and those of the enemy, and in the act of catching fire. Three Germans jumped out and started to run towards their own trenches. From our own, occupied by some Chasseurs, they were fired at, and within five seconds they fell a few steps from their burning machine. 'Sic transit gloria Taubi.'"

* * *

Reuter reported from Paris on December 4th that M. Marc Pourpe, the famous French aviator, who has flown in Australia, India, Cochin China, the Soudan, and Egypt, met with an accident in the district of the Somme on Wednesday last, which resulted in his death and that of the aviation officer who was accompanying him.

[In the absence of confirmation, everyone hopes that M. Pourpe was only killed "to order" by one of Reuter's imaginative representatives, aided by a reference book containing the names of well known "airmen."—Ed.]

* * *

It is reported that a squadron of Nieuport seaplanes have been taken to the Adriatic to co-operate with the French fleet there.

* * *

The "Weekly Dispatch" records that "from Nancy a story comes of a German airman, who had located a French battery in a small wood. For hours, it is stated, the warplane hovered over the wood and dropped on it 985 bombs. But the French, as it happened, were not there. They had managed to move their guns to another position, and the total bag of the 985 bombs was two horses."

[985 bombs! Some "warplane."—Ed.]

Mr. W. Beach Thomas, of the "Daily Mail," writing from Northern France on Sunday, makes the following observations:—One air fight took place some while ago which deserves record. The first airship—not technically a Zeppelin, though it was called so—came over the British lines. It had a minimum crew and a very large amount of explosive. Three aeroplanes went to attack it. The fight was important as a test battle between the two sorts of craft. It is claimed for the Zeppelin that the great height at which it can travel—8,000 feet is about the practical maximum—the length of time it can remain in the air—the longest journey is just under 1,000 miles—[Both figures have been beaten by aeroplanes, and the former is an ordinary flying height.—Ed.]—the amount of explosive it can carry—a burden up to five tons [Five tons is the "all-in" load including crew and fuel.—Ed.]—make it the master ship, the Dreadnought of the air. The contention may be true, and one case proves nothing. But the bigger craft is both slow and as a target big. In this particular case the ship and the planes played the game of the heron and the hawk, and the aeroplane hawks travelled so much faster that they won the superior altitude without trouble. Finally a bullet took effect and the ship crumpled up [Possibly the gunner in the victorious aeroplane lost his temper and threw his mitrailleuse at the Zeppelin!—Ed.] One of the observers declared that he and his companions could distinctly see against the sky the atmospheric effect of the escaping gas! However that may be, the ship was destroyed. No more have since been seen, except a small captive ship that is more properly called a balloon." [Will some kind reader on the staff of the "Mail" please tell Mr. Thomas to learn something about aircraft?—Ed.]

* * *

The Central News correspondent in Paris reported on December 3rd as follows:—

"For various reasons it has not been deemed advisable to throw much light on the doings of the French military airships. The following particulars are, however, published here to-day, and serve to show that the dirigibles are doing excellent work.

"About three weeks ago the Germans had accumulated at the railway station of Tergnier—one of the most important strategic points on the Northern railway system—a large number of locomotives and wagons for use in the transport of their

stores. In the middle of the night a French dirigible flew over the station, halted, descended to a low altitude and dropped on the engine-shed several bombs which destroyed the greater part of this material. Other bombs blew up the permanent way, and others destroyed the viaduct connecting Tergnier with the railway lines leading eastwards.

"A few days later the official communiqué announced that the cannonade was less violent in the region of Roye and Lassigny. This was the fruit of the French airship's trip, which had stopped the reprovisioning of the Prussian batteries.

"On another occasion a dirigible during a cruise observed an important depot of ammunition and foodstuffs far in rear of the German lines. A few well-placed bombs, and the depot was annihilated. Similar exploits have been accomplished at many spots within the occupied territory.

[One may receive these stories with a large grain of salt. Unless some new airships have been produced recently it is unlikely that the French possess any airships at all by now. Two or three were shot down—by their own men it is said—early in the war, and the rest can be of little use.—Ed.]

GERMANY.

The Bavarian Press reports that Major-General von Meyer, while entering a motor-car, was killed by an arrow shot by a hostile aviator. Presumably, the reference is to the French fléchettes, which, apparently, the R.F.C. still refuses to use.

* * *

The "Daily News" correspondent at Copenhagen wired on Sunday, December 6th:—Great excitement has been caused in Germany by an aerial raid to Freiburg. Four bombs were dropped on the railway junction and are said to have caused much damage at a very important point. The machines were visible some time before the attack, but attracted no special attention as it was not thought that the machines, which were flying quite low, belonged to the Allies. The machines were also seen for a moment from Karlsruhe, but there also they only attracted slight notice. It is reported that the machines returned safe to France.

* * *

It was reported from the Hague by the "Exchange" Co. on December 3rd that it was rumoured in Berlin that a foreign airman flew over Krupp's factories on December 2nd and dropped some bombs on the cannon hall. The extent of the damage done was unknown. The "airman," it was stated,



M. VERRIER "AT HOME."—A function at the "Hotel des Pins." M. Verrier, on crutches, may be seen on the lowest step. The patriotic doctor who runs the hospital is in the centre of the picture, with his wife and the nurses.

managed to escape unhurt. The news had caused great excitement in Berlin.

[No confirmation or news of any sort about the event came from the Allies' side, but one would have been quite prepared to take the Germans' word for it. Unfortunately, it seemed likely that the entire yarn might have come from the Hague, and, on the whole, Berlin is the more truthful source of information. Later on the story was denied in toto by the German papers. However, the rumour apparently really did get from the Hague to Berlin and caused something of a sensation, and, anyhow, it is only a case of intelligent anticipation.—Ed.]

* * *

A correspondent of the "New York Times" who has been with the German army says:—"It is a significant phenomenon that you cannot talk for five minutes with any officer or common soldier before he switches the conversation to the all-absorbing theme of the coming Zeppelin attack on England. The whole German people is waiting patiently for the blood-red letter day when the expected attack shall occur."

* * *

Mrs. Mawer, who was keeper of the English Church at Frankfort-on-Maine, and has just returned to this country, says:—"The German people do not conceal their bitter disappointment at the failure of their Zeppelins, on which so much money has been spent. They have lost four Zeppelins in Russia, and others—nobody knows where. I lived near a Zeppelin shed, and I think the people of London need not stand in fear of a Zeppelin raid. The machines make a noise which can be heard a considerable distance away, and to have the slightest chance of doing damage with their bombs they must fly low."

* * *

The correspondent of the "Telegraph" at Rotterdam reports on December 2nd that he has learned that "Zeppelin airships have proved useless for the purposes of war on land, but I have learned from a gentleman now safe in England that they are vigorously practising how they will sink the Allies' fleets. He has just returned from Bavaria, where he had the bad luck to be when war was declared, and when out of prison he watched with field-glasses the manoeuvres of the Zeppelins over a military area. They ascended to a height which he heard they considered a sufficient safeguard against gun-fire, and on arriving there dropped 'great, boat-shaped weights,' which were obviously unloaded bombs. The target was a wooden erection covering an area roughly approximate to the deck of a battleship. When the bombs hit they crashed through the stoutest beams as if they were matchwood. The practice was diligently carried out, and my informant watched it with the intention of laying what information he could ascertain before the proper authorities when he should reach England. His favourite vantage-point was the roof of the house in which he lodged.

"One day, despite all the precautions he took, and the apparent absence of any watch being kept upon him, he was startled by a bullet crashing through a chimney-pot near where he was lying. He hid the glasses, escaped through the back door, and, returning by a roundabout way, joined in the spy hunt, which was in full swing."

[A Zeppelin would make a very fair mark at 10,000 feet for high-angle guns, even if it could get there with a supply of "great, boat-shaped weights"; but unless each "boat" was steered by an aviator mounted on its poop, with the pluck of a Greek hero, its chance of hitting a battleship would be remote.—Ed.]

RUSSIA.

The Russian correspondent of the "Morning Post" reports concerning the Germans in Poland:—"Experts estimate that the Germans have lost two-thirds of their army in Poland. The Emperor's sons, Oscar and Joachim, are reported to have escaped only by taking flight in an aeroplane."

[The Slav mind is always ingenious, and this is quite the most ingenious rumour yet invented about aeroplanes in the war, for it might quite possibly be true.—Ed.]

The "Morning Post" correspondent at Petrograd reported on December 1st:—"The German attack on the Russian left with new forces brought up by train from the West developed on Sunday, and was delivered with great determination on Monday. The numbers were reported to be considerable, and the

Russian aviators ascertained that they had come to Kalisz by train.

"Twice they (the Germans) have brought up reinforcements from the West—namely, those officially described as 'considerable,' which were detected in the neighbourhood of Wielun by the Russian aviators over a week ago, and again, more recently, the strong forces sent by rail from the West and attacking from Kalisz."

BELGIUM.

It is reported that two British aviators again flew over Ghent on December 1st, dropping bombs on the military drill-grounds. Seven German soldiers were injured.

From Terneuzen it was reported that on November 28th British aviators dropped bombs near the outer port at Zeebrugge. Two did not explode, and one fell into the water. Two workmen were slightly injured and some material damage was caused. The Germans fired at the aviators, who escaped.

Neither report is confirmed officially.

* * *

A special correspondent of the Rotterdam newspaper, "Vaderland," writes in an article published on December 6th, and dated at Huy, Belgium, on Friday, December 4th, that twelve Zeppelins passed that day in the direction of the French frontier at Givet.

["Venient omnes."—Ed.]

* * *

Mr. Percival Phillips, of the "Express," writing on Sunday 6th from the Belgian frontier, says that much uneasiness is caused to the Germans by the systematic work of the Allies' aeroplanes. Fleets of armoured cars with anti-aircraft guns have been brought into the area of the right wing, and are based on Bruges, Roulers, Thielt, Thourout, and Courtrai. Apparently the German theory is that the motorists will pursue the hostile aircraft. The sentry posts have been linked up by field telephones, and observers who spot aeroplanes with their powerful binoculars will telephone to the nearest motor-car base. Many futile attacks have been made on the air-scouts, but there is no record of machines being brought down. On the other hand, the aviators have several times successfully engaged the enemy.

It is stated that in one such battle near the village of Zedelghem, half-way between Bruges and Thourout, one of the Allies' biplanes, armed with a quick-firer, put the crew of an armoured car out of action. On nearing the Ostend-Thourout railway the biplane dropped low, apparently to examine the new German trenches. The sentries telephoned to Thourout, giving the direction of the aircraft, and an armoured car immediately started along the Bruges road. The aviators dropped lower and lower, and the peasants thought they were about to land. At this moment the car, turning off the main Bruges road towards Zedelghem, saw the aeroplane just above the roof of a farmhouse.

The driver swung the car round violently in his excitement and caused it to skid. The gun crew were badly shaken and the car was nearly overturned, and so delayed getting into action. The biplane came deliberately towards the car. The gun crew tried to get into cover underneath the vehicle, but the lieutenant in charge ran for shelter to a building less than fifteen yards distant, just as the aeroplane's maxim began firing. This lieutenant and another man were killed and two others wounded. The remainder of the motor crew fired a number of shots, but the biplane, which, according to the evidence of the Germans themselves, was handled with superb skill in an adverse wind, lifted and disappeared in the direction of Nieupoort.

Mr. Phillips further reports that the enemy's aviators now take a far less active part in the operations than ours. While they are good scouts, the majority, according to definite statements made to him by one of the neutrals already quoted above, are not keen to engage in aerial duels. They will make daring voyages, but their enthusiasm has visibly been damped by the eagerness of the Allies' aviators to have a good fight on every possible occasion, pursuing and attacking with the deliberate vindictiveness of a hawk after a chicken.

* * *

Mr. Wm. Ridsdale, of the "Daily News," reported on December 2nd:—"British airmen have inspected from above

formidable defence works built of ferro-concrete which extend from Eecloo to Brussels—a distance of approximately 60 miles.”

[Nothing has demonstrated the marvellous efficiency of our air scouts so well as this. The ability to tell ferro-concrete from ordinary concrete, or from a mud wall, when seen in plan from 5,000 feet, is one of the regular tests of the “airmen” of the British Army Air Service and the English Naval Flying Corps (names specially invented for the use of the daily Press). How it is done is one of those secrets which even the most acute German waiter at Hatchett’s or the Savoy never discovered.—Ed.]

SWITZERLAND.

The following official statement was published at Berne on December 2nd:—

“In discussing the alleged violation of Swiss neutrality by English aviators, a section of the Swiss Press has reproduced statements from the South German papers suggesting that the British Minister at Berne, Sir Evelyn Grant-Duff, had infringed Swiss neutrality. It is the fact that at the beginning of November the Minister took a motor trip into the Swiss Rhineland and the Lake Constance district and stopped, among other places, at Romanshorn. With the permission of the priest he climbed the steeple of the church there, but it has been established that on that day the weather was misty, and it was impossible, at all events with the naked eye, to see Friedrichshafen and the German shore of the lake.

“It has also been established that none of the three aviators who afterwards took part in the Friedrichshafen raid were with the Minister on his trip, and it may be mentioned that in making application for the necessary permit he gave the General Staff an exact indication of the plan of his tour. The reports that the Federal Council had asked or intended to ask for the recall of the Minister are without any foundation.

“The following statements which have found publicity in the Press, especially the German papers, are equally untrue: (1) That the Public Prosecutor had been instructed to make a searching inquiry into the matter; (2) that the Federal Council had issued a fresh order as to the measures to be taken against foreign military aviators; (3) that a strict inquiry had been opened as to the responsibility of the officers commanding the troops on the frontier; and (4) that the Federal Government had sent the Imperial German Government an explanatory Note.”

The French Minister has handed to the Federal Council a declaration by the French Minister for Foreign Affairs expressing sincere regret if it should prove to be the case that there was foundation for the Swiss complaint that French aviators had infringed Swiss neutrality, and adding that if this was so the incident could certainly only be attributed to inadvertency. The declaration further stated that the French Government valued more than ever Swiss neutrality, and wished that it should be scrupulously respected by French troops, whether it was a question of the actual territory or the air above it.

The British reply stated that the aviators who participated in the attack on the Zeppelin works had formal instructions not to fly over Swiss territory. If, in spite of this, they had done so it must be attributed to accident and the difficulty of recognising at a great height the position of an aeroplane. The British Note proceeds: “In view of the proofs advanced by the Federal Council establishing the fact of the passage of the aviators over Swiss territory, the British Government gives the assurance that the aviators acted contrary to its intentions, and expresses its deep regret.

“The British Government wishes to take this opportunity of stating that the orders given to the aviators and the expression of regret for the non-observance of its instructions are not to be interpreted as a recognition by the British Government of the existence of a sovereignty of the air.”

The Federal Council has thanked both Governments for their statements, and has informed the British Government that, as international law does not recognise any limit to the sovereignty of the air, the Federal Council must claim this sovereignty to its full extent. The Council points out that since the mobilisation of the Swiss Army it has issued instructions accordingly.

* * *

A remarkable article, which has every appearance of being accurately informed, was published by the “Daily Express” on

December 4th, having being sent from Geneva on December 1st:—

According to a Swiss engineer who has just arrived at Romanshorn from Friedrichshafen, the latest Dreadnought Zeppelin was seriously damaged in the recent raid. The Swiss, who was an eye-witness of the bombardment from an hotel near the Zeppelin sheds, counted nine bombs, which fell in an area of 700 square yards round the Zeppelin works and sheds. Two bombs fell on the sheds themselves, one greatly damaging Zeppelin 32 and the other destroying the gasworks, which exploded and sent up gigantic flames in the sky.

It is not true, the Swiss engineer says, that Commander Briggs was slashed across the face by a German officer. When captured he was nearly fainting, and was kindly treated by the officers, and has now been transported to the large Weingarten Hospital at Friedrichshafen, where he is being tended with every care. In fact, the local officers regard him as being almost on the same plane as Captain von Müller, of the “Emden.”

In the meantime, the feeling of panic continues at Friedrichshafen. A great network construction has been built above the Zeppelin sheds to guard against future aeroplane raids. The Bavarian regiments and night sentinels have been doubled, and the number of mitrailleuses increased, while instead of four anti-aircraft guns there are now ten. In addition to all this, five powerful searchlights have been installed in the vicinity of the town on hills away from the lake and the sheds, and they are at work all night, and two additional gunboats from Wurtemberg are stationed in front of the floating shed.

None of these facts, however, must be mentioned by the local Press, or by that of Stuttgart, the official headquarters.

Three days after the British raid a Zeppelin made a short trial trip above Lake Constance, but was obliged to return to the shed as she could not remain in the air. It is a comparatively old airship, although built on modern lines, and was intended to represent the newest Zeppelin, which, according to German accounts, “has not been touched and is ready for warfare.”

It will be noted that reference is made by the Swiss to L.Z. 32, which would thus appear to be the latest number of the Zeppelin series. If so, the output is very slow, for L.Z. 28 was out quite early this year.

DENMARK.

Mr. W. M. Duckworth, of the “News,” reported from Copenhagen on December 3rd that the German naval officer-aviator who, with an observer, was blown ashore in a storm near Esbjerg on Monday, refused to give his word of honour not to leave, as is usual with belligerents in a neutral country. He has therefore been placed under a strict military guard by the Danish authorities.

THE AEROPLANE’S Danish correspondent writes:—The German aero-paper “Flugsport,” issue November 11th, contains the following aerial casualty list:—Feldflieger department: Lieut. Bluthgen killed, Lieut. von Heyden taken prisoner, Sub-Lieut. Finger killed, Sub-Lieut. (in the reserve) Neufeld killed by accident at Doeberitz, Aviator Kurzmann dead from illness, Sub-Lieut. Ostermann killed, Vizefeldwebel Schall wounded, Sub-Lieut. Gehrke killed, Sub-Lieut. Hanke killed, Lieut. Roth killed, Lieut. Hass killed, Lieut. Bone wounded, Lieut. Birkner (hitherto missing) has been taken prisoner, Oberlieut. Schwartzkopf wounded, Lieut. von Kleist missing, Lieut. Menzel missing, Aviator Hocker killed by an aviator’s bomb, Aviator Schneider killed by an aviator’s bomb, Aviator Wehner killed by an aviator’s bomb, Aviator Haeck wounded by an aviator’s bomb, Aviator Ressleringer wounded by an aviator’s bomb, Aviator Thieme wounded by an aviator’s bomb, Aviator Deitert wounded by an aviator’s bomb, Aviator Werner wounded by an aviator’s bomb, Aviator Roosch wounded by an aviator’s bomb. Aviators’ reserve department: Voluntary aviators Post and voluntary pupil Silberhorn killed by accident at Johannisthal (already reported earlier—E. H.). Ersatz-aeroplane squadron No. 3, Grossenhain: Lieut. von Gche wounded, Sub-Lieut. Noak killed, Aviator-reservist Kern missing, Musketeer Schneider missing. Boatman’s mate Hoffman, from the voluntary naval aviators’ body, killed by accident from a height of 3,000 feet at Johannisthal; his passenger, Oberlieut. Santen, got only slightly wounded.

The list of those granted the Iron Cross runs: Oberlieuts. Baur-Betaz, Chrienitz, Hildebrandt, von Arnim, von Wedemeyer, Thumm, Prew, Barten, Albrecht, Schilling, von Buttlar, von Kuhn, Warzaw, Kunz, Felmy; Lieuts. Schmickaly, Eysler, von Mudra, Schroder, Fritsch, Adami, Braun, Rademacher, von Kissel, Hennigs, Stoewer, Nette, Lehmann, Keld, Knilling, Schuster-Woldan, von Eberhardt; Feldwebel Panke, Vizefeldwebel Cipa, one-year's Volunteer Gotte, Sergeant Hahn, Sub-officer Uhlig, one year's Volunteers Haaise and Schwarz, and Aviator Steinhauser; further, the civil aviators on military service Hans Vollmoeller, Kulisch, Lieben, and Römpler. All for aerial exploit.

U.S.A.

One always has to go abroad for real news. The following is sent by an American reader from the "New York Times":—

"Ottawa, November 20th.—Miss Beatrice Nasmith, of Vancouver Province, a well-known newspaper woman, states that her cousin, Dr. George Nasmith, of Boston, assured her he had seen work under way on German Zeppelins which are intended for a descent on London. He also saw the bombs being manufactured, the interesting thing about them being the planes on either side of the bombs which keep them from falling in a straight line."

[Bombs which have to be prevented from falling in a straight line are a distinct novelty. Probably they are made to wobble in the air so that the pom-poms on H.M.S. "Flatroof" may not hit them as they descend, and so explode them before they can get in their really fine work.—Ed.]

EGYPT.

Reuter reported on December 3rd that British aeroplanes are making constant flights of late over the Sinai Peninsula. There is no sign of the enemy.

[No portion of the R.F.C. or of the R.N.A.S. is known to be in Egypt, and the only machines are likely to be one or two belonging to civilians. One can, however, state definitely that there is no truth in the report that the Egyptian Engineers are tuning up the winged sphinxes as an auxiliary to the Egyptian "flying corps."—Ed.]

NOVA SCOTIA.

It was reported from Halifax (N.S.) on December 3rd that the Norwegian steamer "Sandefjord," for Copenhagen from New York, was captured by a British cruiser off New York and arrived at Halifax in charge of a prize crew. She carried a cargo ostensibly of cotton, but it is suspected that concealed among the bales was a quantity of silk for Zeppelins, hence the seizure of the cargo as contraband of war. [A very ingenious yarn, and possessing some slight tinge of novelty, on which the Exchange Telegraph Co. is to be congratulated.—Ed.]

Southampton District.

Very little flying was done during the past week, owing to bad weather. On Thursday morning, Mr. Mahl was out on a Sopwith Sunbeam-engined tractor, and gave an acrobatic performance when starting off. He left the slipway at Woolston, and was taxi-ing down the Itchen, when he evidently saw something loose in the passenger seat, so instead of stopping the engine, he let the machine take its course, and, climbing out on to the top of the fuselage, crawled along to the passenger seat, and after putting things right, crawled back, the machine continuing as if it had been under its pilot's control all the while. The seaplane had by this time travelled a good distance, so it seems Mr. Mahl had confidence in its directional stability.

Another Sopwith tractor was out for test at Woolston on Saturday, but suffered from engine trouble.

An Avro tractor has done much flying, its busiest day being Sunday, when it was out continuously, until rain came in the afternoon. This machine was out also on Saturday, and ever since it arrived in the district last July it has proved its sterling worth. Various Sopwith tractors, Wights, E.A.C.s, Avros, and Henri and Maurice Farmans have also been about. A Henri Farman was wrecked in the gale on Friday whilst it was being brought to Hamble; but one more or less will not make much difference with numbers as they are now.

Works which would be useful at present for repairing machines are those of the Hamble River, Luke and Co. It seems a pity to see all their machinery going to waste.

A CLIMBING TEST.

Through the kindness of an American friend, it is possible to give some interesting particulars of an altitude flight which was made on October 8th last by Captain H. LeRoy Müller, Aviation Section, Signal Corps, United States Army. This is of particular interest in that it is the first time a properly observed climb has been described in detail.

Although Captain Müller was not out for records, the height reached by him exceeds considerably the official British altitude record, which stands to the credit of Squadron-Commander Briggs, R.N., at 15,000 feet, though apparently both these figures have been beaten unofficially by Mr. Norman Spratt, R.F.C., and by Major Becke, R.F.C. The interest in the American flight, however, lies in the pilot's own careful observations of the performance of his machine.

The aeroplane used was a Curtiss tractor biplane of the model "J" type, fitted with an ordinary O-X 90-h.p. Curtiss motor of the type illustrated in this issue. Captain Müller had had little previous experience of flying tractors, having only had the machine in his possession for a week or so, during which he had made some flights of about fifteen minutes' duration in order to find out the most efficient climbing angle for this machine.

Two of these climbs reached heights of about 7,500 and 6,500 feet respectively. Captain Müller recorded that on the first of these climbs the angle was so steep that the oil gravitated to the rear of the oil-ump, uncovering the oil-pump intake, so that the cylinders ran dry and the motor stopped. To get over this difficulty a suction pipe from the oil-pump was run to the middle of the sump, so that the pump would work as long as the oil remained in the sump to a certain limited angle of climb. A gravity needle was devised which registered the angle of climb at which the oil level approached the danger mark. The oil and petrol consumption in gallons per hour were obtained and the fuel was measured carefully in preparation for the big climb.

In this, Captain Müller allowed himself 2½ hours to climb and 30 minutes to descend. The times for the climb were carefully checked and worked out as follows:—

- 1,000 feet, 1 minute;
- 4,000 feet, 6 minutes;
- 7,000 feet, 14 minutes;
- 10,000 feet, 24 minutes;
- 13,500 feet, 49 minutes;
- 15,000 feet, 1 hour 15 minutes;
- 17,441 feet (corrected altitude), 1 hour 47 minutes.

A large registering barograph was carried, which enabled the pilot to observe his climb up to 5,000 metres, and at no time did the pilot push the machine except at the top of the climb, as noted hereafter.

The methodical manner in which Captain Müller went about his work is shown by a remark he made in his report, that the motor behaved splendidly with one brief exception—namely, when between 12,500 and 13,000 feet the motor lost 50 r.p.m. within one minute, and after some difficulty in obtaining the proper adjustment of the petrol supply the pilot found that at that height three-quarters of a turn of the petrol-supply needle-valve was necessary to obtain the correct mixture. As he rose higher slight reductions of the petrol feed were required, making in all an additional three-quarter turn of the needle, or 1½ turns altogether. During the descent the pilot increased the petrol feed at the proper heights.

This reduction of the amount of petrol used at high altitudes will be of interest to those who have not previously studied the subject of high flying. It is due to the fact that a particular mixture of air and petrol is necessary for the most efficient explosion of the gas in the engine. As one rises higher, the air becomes thinner and consequently less of it is sucked into the cylinder at each stroke, so that if the petrol feed is left in its normal position the proportion of petrol to air is too great. Thus the amount of petrol needed to give the maximum power procurable from the engine at that altitude has to be reduced.

This means, of course, that the engine is actually giving less power per stroke because the total amount of mixture is reduced, but to compensate for this the thinness of the air means that there is less head-resistance to the working of the propeller and the resistance of the machine as a whole

is reduced. Consequently, when at high altitudes, the machine is actually progressing through the air faster than when it is low down. This, of course, is obviously necessary in order that a sufficient amount of air may come in contact with the wings to maintain the machine at that altitude.

Dr. Alexander Bell, the Canadian scientist, has a theory in connection with this fact that at very great altitudes long distances may be covered at greater speeds and with greatly reduced petrol consumption, so further experiments in this direction seem worth carrying out.

The increased revolutions of the engine due to this reduction of air resistance may be noted from the following figures: 1,150 r.p.m. at the start, 1,200 r.p.m. at 7,000 feet up, 1,225 r.p.m. at top of climb by adjustment, 1,150 r.p.m. for five minutes at about 13,000 feet.

The total climb lasted for about 1 hour 47 minutes, and the total flight 2 hours 27 minutes, during which period the petrol consumption was 14½ gallons and the oil 7 pints.

Captain Müller reported that the motor was running quite smoothly at the top of the climb and gained a further 25 r.p.m. through his efforts to push the climb over the margin of the barograph scale, which was limited to 5,000 metres. At that time the machine was undoubtedly climbing strongly, but although he knew the machine was lifting steadily and made persistent efforts to hold the 5,000 metre mark, the needle receded about 300 feet and remained at that height for over 20 minutes, during which time he continued to climb. From this he deduced that instruments become inaccurate at their maximum altitude reading.

However, he states that from 14,000 to 15,000 feet he encountered violent rough air which necessitated flying at reduced angles and at times actually pointing the machine down to right it after a gust, and he shrewdly draws attention to this for the information of other altitude fliers. Again, at 16,000 feet he encountered badly disturbed air which reduced his climbing rate. From this it seems quite likely that the dropping of the needle for about 300 feet when at the 5,000 metre limit may have been due to a persistent down-current which more than counterbalanced the climbing speed of the machine at that height, so that, although he was actually climbing through the air, the machine was really getting lower.

As to his personal sensations, Captain Müller says that he had a slight feeling of nausea at about 16,000 feet, but this wore off and he felt exhilarated at the top of the climb. He recommends that oxygen tanks be carried by aviators flying above 15,000 feet. He further recommends a regular use of air speed indicators, as they are essential both for efficiency of climb and for safety when encountering violent disturbances. One might, however, add to this that air speed indicators presumably suffer from inaccuracy at high altitudes owing to the thinness of the air operating on them, though perhaps it may be that, as the air pressure at the negative end of the instrument is equally reduced, the two reductions may cancel one another.

The Industry in Leeds.

Occasionally virtue has its reward, and it is then a pleasant task to record the fact. Mr. Robert Blackburn of Leeds, who has been building aeroplanes for the last four years, is at least a case in point. The following paragraph from the "Yorkshire Post" is witness to the fact:—

"The Blackburn Aeroplane Co. are at present working at full pressure on an order for the Admiralty. The firm has been working on this order—which is for aeroplanes—since the early part of September, and it is likely to engage its attention for six months.

"They are, of course, working overtime, and in view of the extreme pressure extra hands have been employed. There are now between 250 and 300 employes. A representative of the firm informed us to-day that they hope very shortly to turn out one or two machines a week."

The reference is, of course, to the Blackburn Aeroplane Co., Ltd., which recently took over Mr. Blackburn's private business, which was not a Limited Company, and, with him as Managing Director, has proceeded to expand rapidly. One need not therefore be surprised at the "Yorkshire Post's" statement that the firm is working on an order for aeroplanes, for after Mr. Blackburn's experience in the past it is hardly

likely that the firm would be, like Sister Susan in the song, "sewing shirts for soldiers."

Mr. Blackburn has been fortunate in securing two valuable chief assistants. Mr. Waller, the Secretary of the new firm, is a business man who conducts the firm's business in a businesslike way, and Mr. Stepney Blakeney, the new Works Manager, was for years an engineer on the London and North-Western Railway, and previously had experience of workshop methods in the London, Brighton, and South Coast Railway and the Great North of Scotland Railway shops, so that he is used to dealing with men of all the types produced in this country.

One gathers that excellent progress is being made with the machines on order, and that the output mentioned may be greatly exceeded before long.

An Altered Title.

An alteration is being made in the title of the firm which is so well known in the aeronautical industry as the G.A.C. Hitherto the initials have stood for the General Aviation Contractors, Ltd., which is the parent concern controlling the British Emallite Co., Ltd., the Anzani Engine Co., Ltd., and various other activities, and is allied with the Italian Savoia-Farman firm, besides running a general aeronautical accessories business of its own. In future the accessories business will be run as a separate concern from the other allied companies, and will be known as the General Aeronautical Company, Ltd., and to this concern the well-known trade mark of the G.A.C. has been transferred. As in the case of the other allied companies, it will be financially under the control of the General Aviation Contractors, Ltd., but its trading will be done as if it were a separate business.

One is pleased to hear that all the companies of this group are doing good business, and one hopes that the enterprise which has controlled them from their foundation will meet with its due reward.

The Sussex County Aero Club.

A good crowd witnessed the first day of the finals for the Sports on Saturday last in connection with the Shoreham Camp of Kitchener's Army. Lady Ramsey presented the prizes.

The annual general meeting of the Club was held in the afternoon. It was decided to extend the objects of the Club with a view to authorising the Committee to do anything they may consider advisable to assist in the defence of the country.

The Chairman, Mr. G. A. Wingfield, in his speech, said that while the Club was primarily formed for the promotion of aviation in the county the Committee felt that owing to the War the Club could be of good use in other ways in the interests of the whole country; for instance, it was proposed to construct, with the kind permission of the proprietors of the Aerodrome, miniature and long distance rifle ranges and a revolver range.

The Committee urged upon the members the desirability of using their energies to extend the membership, because they felt the work they desired to do contributed to the success of the country in the present military crisis. The Committee expressed their thanks to Col. Augustus C. Woolley, J.P., Lt.-Col. Hudson, and Major Buhl for assistance since the commencement of the war, particularly in organising the Military Sports for the recruits.

Record Petrol Supplies.

In a recent week's list of petroleum imports the Anglo-American Oil Company (Proprietors of Pratt's Motor Spirit) strikingly stands out. The well-known oil tanker, "Iroquois," towing the gigantic barge, "Navahoe," berthed in the Thames from New York with over 2½ million gallons of motor spirit and an almost similar quantity of gas oil, while the "Chester" delivered to Bristol nearly 1,000,000 gallons of illuminating oil from New Orleans. For the same important company also the "San Zeferino" delivered to the storages on the Manchester Ship Canal over 900,000 gallons of illuminating oil, while the "Cuyohoga," from Philadelphia, landed at the Bristol storages over 1,500,000 gallons of the same product. At Belfast the Anglo-American Oil Company received the "Aral" with over 1,000,000 gallons of illuminating oil, and at Dublin the "Charlois" discharged an almost similar quantity. The company also imported large quantities of lubricating oil during the week,

there having been not less than 250,000 gallons discharged at various points of the United Kingdom. In a word, the imports of this company during the week in question are, like the total quantities imported, phenomenally large. The "Anglo" has quite recently taken over a bulk oil installation at Cardiff, and a new petroleum harbour at Salt End, Hull

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Gale	Gale	Gale	Gale	Gale	Gale	Fog
South Coast...	Rain	Storm	Storm	Rain	Storm	Fine	Fine
East Coast ...	Windy & Rain	Windy	Gale	Very Windy	Gale	Fine	Fine

Hendon.—AT THE BEATTY SCHOOL.—Instructors: Messrs. Geo. W. Beatty, W. Roche-Kelly, and E. Baumann. Pupils with instr.: Messrs. Virgilio, Leeston-Smith, Gardner, Newberry, and A. Fletcher. Machines: "Dual" controlled 40-h.p. Wright biplane and 50-h.p. Gnome biplane. Owing to

bad weather during past week only small amount of training possible.

[The photograph of Mr. W. G. Moore, pilot aviator, of this school, was published last week over the name of Mr. Bond, of another school, owing to a photographer's error.—Ed.]

At HALL SCHOOL.—Owing to gale and rain whole week no outdoor practice. On Sunday, Instructor J. Rose out testing 35 h.p. and J. L. Hall 45-h.p. tractors, but fog too dense for School practice.

At THE LONDON AND PROVINCIAL AVIATION Co.'s SCHOOL.—Instructors: Messrs. W. T. Warren and M. G. Smiles. Pupils doing strts. or rolling alone: Messrs. Moore, Abel, White, England, Derwin, and Laidler (new pupil). Machines: L. and P. biplanes.

Shoreham.—AT THE PASHLEY BROS. AND HALE SCHOOL.—Instructors: Messrs. E. and C. Pashley. Pupils with instr.: Messrs. A. Goodwin, J. Sibley, J. Morrison, and G. Charley. 8's and circs.: Messrs. C. Winchester, T. Cole, and J. Woodhouse. Machines: Pashley and H. Farman 50-h.p. Gnome biplanes.

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"THE AEROPLANE," DECEMBER 16, 1914.

THE AEROPLANE

Edited by C. G. GREY. ("Aero-Amateur")

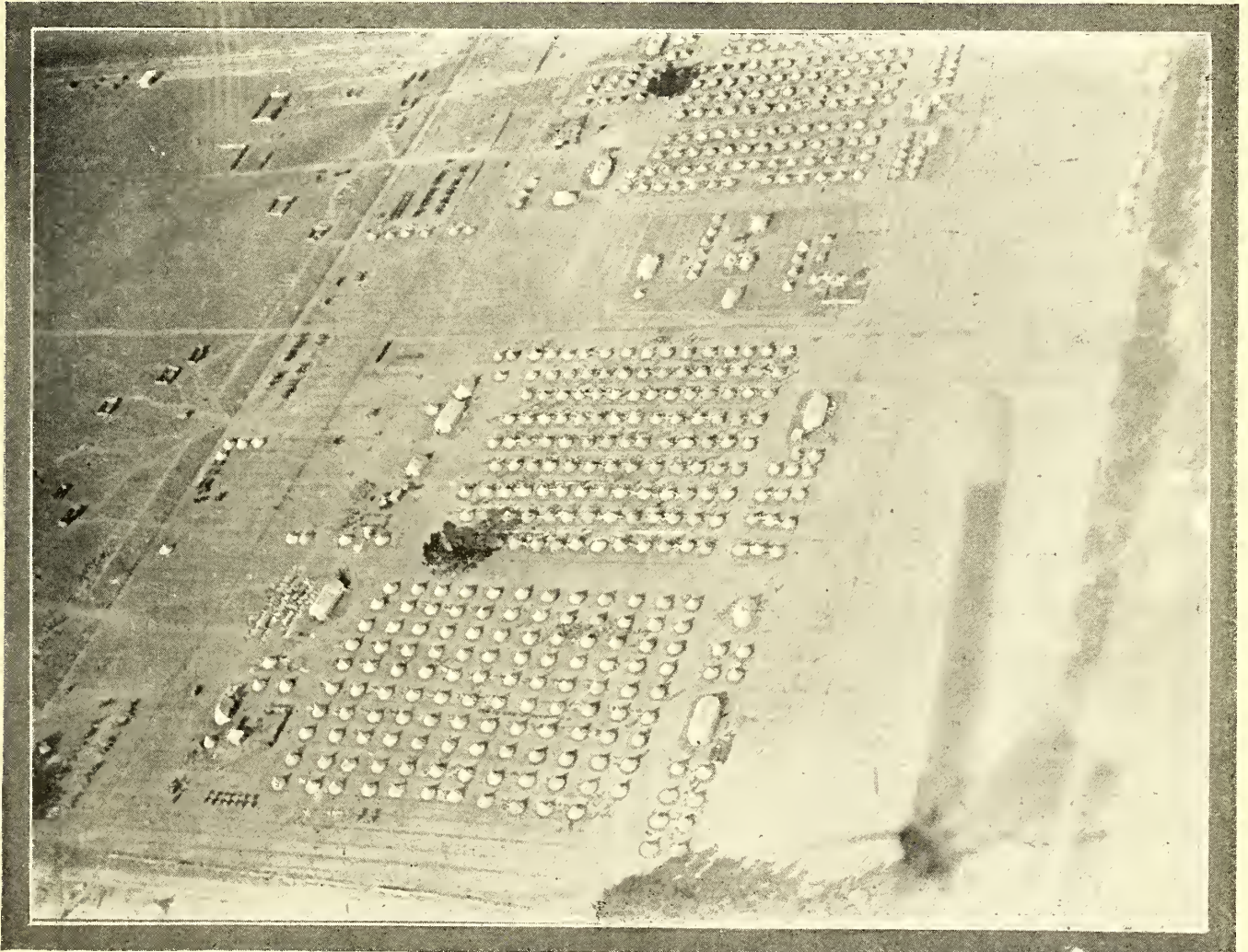


VOL. VII. [REGISTERED AT THE G.P.O.
AS A NEWSPAPER.]

WEDNESDAY, DECEMBER 16, 1914.

No. 25

"THE YOUNGER NATION."



The Camp of the Victorian Contingent of the Australian Expeditionary Force, on the Werribee Plain. The first of the "Younger Nations'" armies to get to work. Photographed by the Director of Military Operations of the Australian Army from Captain Henry Petre's biplane.

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The New(s-Paper) War.

This is a purely personal matter, and may therefore annoy people who dislike reading narratives told by a journalist about himself; but the experience related is so horrid that it seems worth while putting it on paper.

Presumably it was the effect of mental indigestion caused by reading very nearly all last week's papers in search of something remotely resembling authentic news of the doings of Naval and Military aviators. What with News Agency reports, stories by "Special Correspondents" very much at the back of the front, excerpts from the "Tijd," and the "Retch," and the "Tageblatt," and the "Corriere della Sierra," and the "Pesthi Hirnap," and "L'Homme Embusqué," and a few other journals with comic names, and a course of articles by "experts" on the naval and military and aeronautical situations, one is a trifle apt to get one's ideas mixed, and consequently one evening, after some hours of fine confused reading, the person who habitually fills these front pages of THE AEROPLANE fell asleep and dreamed a fearsome dream.

When he woke up it was apparently some years hence, and the paper in his hand bore that date, or thereabouts. As is customary in dreams, his new circumstances did not surprise him, and, as a good little journalist should, he set to work to bring his ideas up to date. It seemed that the war was still going on, but that great changes had taken place in this country. By inference, from a reference to some happening of a few years previously, it appeared that, driven to desperation by the Censorship, the great newspaper proprietors had buried their individual quarrels with one another and had apparently stirred up a tumult of the people which had resulted in a raid on the Press Bureau in which the whole staff of Censors, Assistant-Censors, Deputy-Assistent-Censors, right down to the Temporary-Acting-Sub-Assistent-Deputy-Censors, had been completely wiped out. It was said that some of them had so little heart in their work that they actually held out their hands in the "Enquiry Office" and were led peacefully away, while the Arch-Censor escaped with his life only disguised as "5 Miles of Paper for the 'Daily Terror'" on a motor lorry, thanks to a tender-hearted newspaper proprietor who remembered his blameless life before the war.

Following on this terrible upheaval it seemed that a thoroughly democratic Government had managed somehow to worm its way into power. Aristocrats like Sir Edward Grey and Mr. Churchill, autocrats like Mr. Lloyd George, and two persons vaguely alluded to as "K. of K." and "Jacky of the Fish Pond," who, one gathered, had had something to do with the National Defence Forces, were deprived of their power, and it appeared that they all, with their chief supporters, had emigrated to the United States as being the only country which really appreciated people who were big men in their own particular lines of business. There, apparently, they had secured financial backing and had established an Anglo-Saxon Naval and Military Trust, which had succeeded in carrying a Universal Service Bill through Congress, and the Senate, and Tammany Hall, and were rapidly raising a Navy and an Army of forty million men with really adequate equip-

ment of ships, guns, mechanical transport, and aircraft, which would render the two Continents of America absolutely proof against European or Asiatic invasion, and make it a real white man's country.

Their successors in this country, headed by one Ramsay MacHaggis, a neutralised Scotsman, had at first decided on a "Peace at Any Price" programme, deciding to declare that England would fight no more, but would hand over Ireland to Austro-Hungary and Scotland to Germany, so that England might for once enjoy Home Rule without Celtic interference. Though this programme certainly appealed to a section of the people, a still more powerful section objected.

The newspaper proprietors pointed out that all they really wanted was to abolish the Censor, for when once that was done they could publish any stories they chose, and so could check or stimulate recruiting as the exigencies of the Press demanded. Germany, Austria, France, and European Russia being fought nearly to a standstill, England was capturing all the World's trade left over after the American factories were full of orders, and so the advertisements were coming back. People in this country who had made millions out of armament contracts were buying extravagant motor cars, and jewels, and furs, and exotic lap-dogs, and so retail trade was booming. At the same time people had acquired the "War News Habit" so virulently that war news, and plenty of it, was just as necessary to the circulation departments of the papers as advertisements were to the financial departments. Consequently the newspaper proprietors, through whose efforts all the strong men in the political classes had been removed, decided that the war must go on.

In carrying out this decision they found powerful supporters in Cinema financial circles, who found that "faked" war pictures no longer satisfied their hyper-critical supporters. A rumour that a film was faked was enough to ensure the wrecking of even the most luxurious "Palace," unless heavily guarded by special constables off duty, whose presence had to be secured by free season-tickets for the "movies," and finally it became hopeless to try and "release" any film of the war which had not a guaranteed percentage of genuine corpses in it. The public taste for gore—somebody else's at a safe distance, of course—became as great and as fastidious as that of the populace during the latter days of the Roman Empire. Therefore, it was obviously in the Cinema interests that the war should continue, sufficiently vigorously to sustain public interest, but not on so large a scale as to threaten a serious decrease of population, which would have meant a falling off in newspaper circulation and in the patronage of Cinemas, owing to the necessity for calling out large numbers of recruits.

The popular heroes of the "legitimate" stage and of the Cinemas found their usual vocations gone, but the music-halls seemed to rub along fairly well by engaging newspaper heroes to recite stirring poems when they came home on leave. Some of them even sang war-songs, specially composed by erstwhile rag-time manufacturers, but these chiefly served to stimulate the consumption of cocoa products at the bars of the

halls—which the newspapers permitted to remain “dry” as a sop to the consciences of the “Peace at Any Price” party.

Thus, the “stage” found a new vocation in doing “star turns” for Press photographers and cinema operators at the front, and in supplying “special correspondents” with new and ingeniously contrived stories of their own or their friends’ prowess, though it appeared that some of the more wily of the real warriors ran them fairly close in the gentle art of getting into the limelight and staying there.

The rôle of “limelighter” naturally did not appeal to the old type of aristocratic soldier, whether officer, N.C.O., or man. The officers in their quaint old-fashioned way remained content with a mere mention in despatches, or a D.S.O., awarded while they were alive, though they had to wait till they were dead or invalidated out of the service before they actually received the medal which entitled them to wear the precious little bit of blue and red ribbon. The men were quite pleased when a brigadier told their company officers that the divisional commander had been asked by the corps commander to say that the C.-in-C. thought they had done rather well. And some of them actually got real medals in due course, when the War Office had had time to find out for certain which regiments had been on the Continent.

But, under a truly democratic Government—as generally understood by self-seeking labour leaders—in which Jack is as good as his master and just a bit better, all these antiquated ideas of soldierly dignity and military discipline disappeared, and a place in front of the newspaper limelight became more popular than a place behind a field searchlight.

Popular artillery batteries published their scores in regular columns of the papers, like cricket scores, crack cavalry regiments made gallant charges over ground which had been already cleared by infantry, so as to give the Cinema operators a fair chance. Infantry sections dug themselves in under a heavy fire from camera-men operating from behind bullet-proof shields. But, of course, the “airmen” remained the pets of the public. It took at least a double company of infantry to make anything like a cinema picture, but one “airman” and his machine filled any lense satisfactorily, and even one of their armoured motor-car tenders with its crew grouped artistically round it made a very fair show, especially if they wagged the maxim, and showed how the lid of the cupola opened and shut, and if a popular aviator smiled all the while in the centre of the picture.

It was hereabouts that the dreamer received a shock that nearly woke him up, for as he read along trying to envisage the new conditions of life he came across a heading which ran right across a page and ran thus:—
A DAY WITH THE HEROES OF THE AIR. THE
I AMs AT THE FRONT.

SPECIAL CORRESPONDENT O’BLITHER OF ROTTER’S
AGENCY GOES JOY-RIDING BY LAND, AIR, AND SEA.

And this is how it went on:—

“Who is there in the World, nay! in the Universe, who does not know and admire Wheel-Captain Goliath of the Imperial Aerial Motorists, known to all followers of the war news as ‘Golly of the I AMs’. Otherwise the Jarveys—sometimes spelt Jahveh?”

The dreamer surmised hazily that, as in all truly democratic countries, new ranks and gradings must have been invented so as to make enough titles to go round. The old custom of the United States, where every man over forty used to be a Colonel, was apparently out of date, and the comparatively modern ranks of Flight-Lieutenant, Wing Commander, and so forth, presumably belonged to an extinct régime which smacked of aristocracy. The new rank seemed ingenious as it pertained with equal propinquity to any commander of a mechanically propelled vehicle. The story continued thusly:—

“Whether ensconced like a sardine under the cupola

of his armoured car letting loose the levin of his quick-firer at the fleeing foe, turning cartwheels of victory over the fallen Taube of a discomfited Boche, or dashing in his submarine under the keel of a flat-boat full of German soldiers whom he will presently send to Mother Cary’s chickens (or is it Davy Jones’ Locker?—Ed.) with a well-aimed punch of his ram, the gallant skipper of the I AMs is ever as merry and bright as Mr. Alfred Lester. There is but little ego in his cosmos. Always the friend of Special Correspondent or Cinematographer, he does not keep his feats selfishly to himself, but shares them generously with the great world of paper-readers and cinema-goers. A happy combination of Machiavelli, Alexander the Great (not the tailor), Captain Kettle, Sir Percy Scott, and an armadillo, our modern hero goes his merry way and the world is the merrier for his existence.

“His men are as merry as he, for we live happily in a democratic age. Gone are all the old follies of so-called discipline. Why should officer or man shave or wash if he does not wish to? Why should a free and independent aerial motorist who has agreed in a friendly way with an officer to see that no one steals the I AM’s stores stand to attention and salute officers of other corps or nations, as used to be the custom with common sentries under a tyrannous aristocracy? One has even heard of a martinet of the old school threatening to have a junior officer shot by Territorials for venturing into his presence with his hands in his pockets, but there is none of such vindictive savagery in our modern Army—as the wits of the Press have called our merry aerial motor bandits.

“The happy spirit of the I AMs is extended even to their cars, which bear humorous and apposite names. One, which has made innumerable dashes through the German lines, whence it has returned laden with iron crosses, Uhlands’ ears, and all the other little knick-knacks a sporting motorist loves to distribute as souvenirs to his lady friends, is known as ‘Necessity’—because it knows no law. Another, whose crew has a curious fancy for bringing in German prisoners alive, is known as ‘Adversity’—presumably because it makes one acquainted with strange bedfellows—though perhaps I may in this instance be confusing it with the staff’s limousine. But let us to the day’s work.

“As soon as the streets of Ostend—so far have we now progressed, and there is no Censor to prevent me from saying so—were properly aired, I sallied forth to the Palatial Hotel—(Advert. rates on application.—ADVT. MANAGER)—where the I AMs are almost fittingly housed. There, as the representative of this world shaking news agency, I was most joyfully received by Carburettor-Captain Conkwell, officer of the day. A battalion of the lesser fry of reporters and cinematographers waited on the steps for the great man to grant the daily interview and to permit the usual courtesies to the photographic artists.

“Soon he came into view, his leather cap lashed firmly to his manly brow and his piercing eyes flashing proudly beneath, water wings were tied round his neck; a ten-shot revolver, a bowie knife, a Malay Kris, a Th—(Advert rates again, please.—ADVT. MANAGER)—flask, and a few of the other fittings pertaining to an old campaigner, hung gracefully round his leather jacket, under which we knew he wore a coat of old Saracen mail. Below, a pair of waterproof waders, jack-boots, and spurs completed his equipment. He was ready for any eventuality.

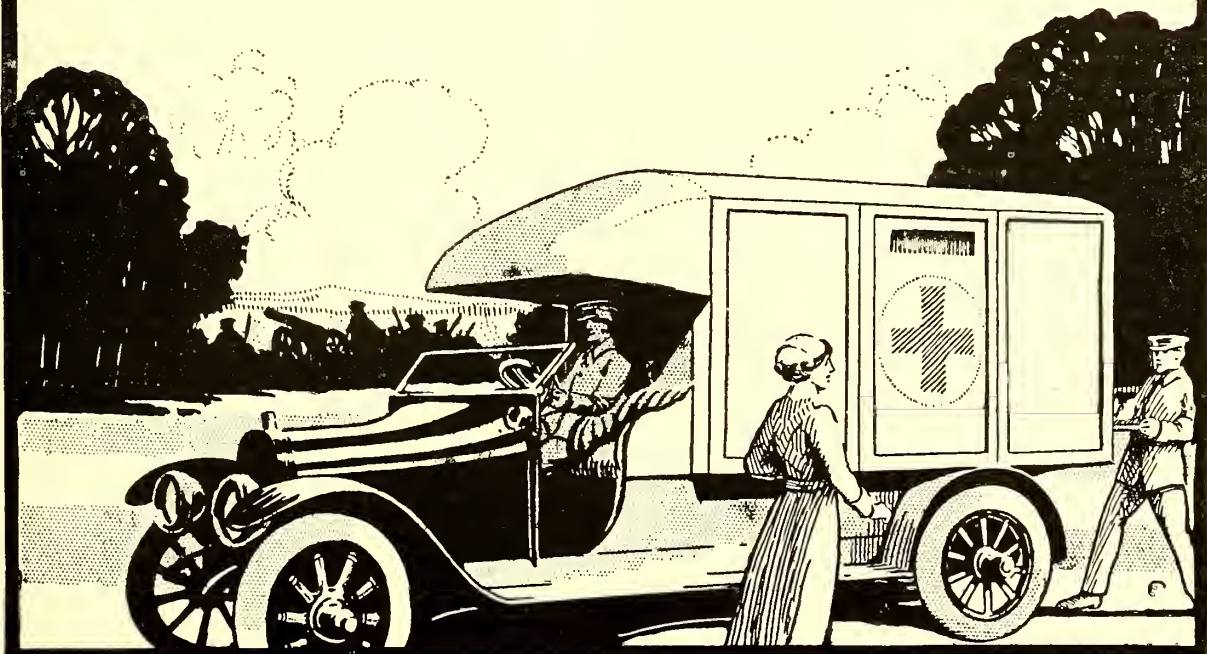
“‘Ha! Ha!’ laughed he, with his winning smile, ‘My good O’Blither! What is our programme to-day?’ ‘To-day let us be kind to the “Daily Terror,”’ I advised, ‘for it is long since its front page was adorned by the I AMs, and it may become neglectful, if itself neglected.’ ‘So be it,’ he assented affably. ‘Once more unto the beach, dear friends.’ So to the famous Digue we went and were duly photographed, serially, in mass, in quarter column, in line ahead, in action front, in échelon, in column of companies, lim-

The wounded

Never in history has better or more skilful attention been given to the wounded than during the present great war, and the petrol-driven motor ambulance and hospital have given invaluable aid in the great work of mercy. Throughout the war-swept area red-cross conveyances of the allied forces are run upon

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and can therefore be thoroughly depended upon. It is well to remember when purchasing petrol to say 'Shell' and insist upon it. It is supplied for all the services of the allied forces only and is obtainable everywhere.



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bering up, repelling boarders, by sections on squadron leaders, and in various other newer formations, not to be found in the Field Service Pocket-Book or in the King's Regulations, but all making highly attractive pictures. Suddenly Golly remarked, 'What a fine morning. Let us go and kill something.' To jump into 'Necessity' and pull down the lid was the work of a moment, but as he sped away I jumped for the off rear dumb-iron and crawled through the port into the aft barquette. Soon we were hurtling into the German lines. A windmill pumping water from an artesian well caught our united eagle eye. A jarring slide as the brakes went on and I shot forward into the nape of the driver's neck. Then a crash as the for'ard three-pounder spoke, and as I recovered my longitudinal stability I saw the windmill totter and fall into the water-butt.—And Germany's Army was bereaved of its Saturday night bath. 'Enough for this morning,' quoth the skipper, and we wended our way back to the palatial headquarters of the corps, where we were regaled in a style commensurate with the price which the Kaiser is stated to have placed on the head of the gallant captain.

"After this sumptuous lunch, excellently served by a large staff of German waiters, each the captive of the great man's own bow and spear, we decided on a trip by aeroplane. Jaunting gently out in the staff limousine to the aerodrome, and overtaking the local hospital priest on the way, we merely jabbed him in the back with the off mudguard so that he looped the loop over the bonnet, and were soon in the air in Golly's pet Shopro gun 'bus. In a few minutes we espied a huge car on the road below us. Its colours betrayed it as one belonging to the German General Staff. To think with Golly is to act. Skilfully dodging a few Jack Johnsons he brought the machine down on the road behind the car, and with a well-placed shot I smashed the near hind wheel. The chauffeur sat paralysed at his post, but from the inside of the car tumbled a stout General officer, whom, despite his attempts to hide inside the bonnet of the car, we at once recognised as General Prince Ludwig von Bummelheim zu Damschwein, commanding the CXth

Comforts for the R.N.A.S.

This week's contributions to the R.N.A.S. Fund are extremely gratifying and should provide a formidable supply of woollies for the men of the Royal Naval Air Service. It cannot be emphasised too strongly that the proper care of both seaplanes and land-going aeroplanes entails great sensitiveness of touch, sight and hearing, and that men who are soaked through and half frozen cannot possibly do their highly delicate work properly. It is to be sincerely hoped, therefore, that those patriotic friends of aviation who have already contributed will do their best to bring new subscribers, so that as the weather gets steadily worse, as it is bound to do, the fund to fight it will grow in direct proportion.

A very large consignment of mufflers has been sent by Commander Hallahan, of the Anti-Aircraft Department, and the Central Needlework Depot of Huddersfield has sent a supply of garments of very fine quality.

The following cash contributions have been received by Mrs. Sueter during the week:—

The Directors of the Grahame-White Aviation Co., Ltd., £25; Employees of the Aircraft Manufacturing Co., Ltd., £14 5s. 2d.; Mr. and Mrs. A. Barr, £10; Mr. H. Huntley, £10; Mr. W. Chapman Wallace, £10; Hewlett and Blondeau (employees and staff), £8 10s.; Mr. E. Michaelis, £5 5s.; Miss Aston, £3; Dr. Sunderland, £2 2s.; Miss Gillson, £2; Miss A. Bolton, £2; A. S. and H. S., £2; the Cedric Lee Co. (3rd contribution), £1 10s. 6d.; (4th contribution), £1 10s.; La Comtesse de Saint Seine, £1 1s.; Professor Cook Wilson, £1 1s.; Mr. J. Rye, £1 1s.; Miss Lindley, £1 1s.; Sara Lady Samuel, £1 1s.; W. S. B., £1; Miss Berthon, £1; Miss E. Smith, £1; Mr. A. Kirkwood, £1; Mann and Grimmer (employees, 6th contribution), 15s.; White and Thompson, Ltd. (em-

Ersatz Division of Thurn und Taxis Landsturm. Placing a time-fuse bomb in the derelict car, and binding the hypnotised chauffeur to secrecy, the skipper persuaded the indignant General, with the point of his Kris, to take a seat before me in the good Shopro, and we whizzed into the air just as the CXXIInd Austrian Honved Cavalry galloped round the corner to the rescue. Amid a storm of bullets, estimated by a veteran R.A.M.C. Colonel (retired) to number not less than 1,273,465, we landed once more at the aerodrome, and handed our prisoner over to the Semi-Intelligence Department.

"Once more to our castellated hotel for tea—(we really must have that advert.—ADVT. MANAGER)—and no sooner finished than the leader of the I AMs spied a German Dreadnought to leeward of the offing. 'What say you to a dash in the submarine?' he questioned gaily. 'I'm with you,' I retorted with equal aplomb. Another dash to the Digue in the luxurious limousine, a scramble down the pier into the steel hull, thick within with engines, batteries, motors, and levers, and reeking of oil, petrol, sulphuric acid, and white mice. The lid slams, the periscope pops up, the whole hull shudders with the first thrust of the propellers, as does a human being who bare-footed treads on a beetle. There is a gurgle of water as the submerging planes take hold and we sink into the deep. The seas race towards us, the vast shape of the German draws ever nearer and nearer. Golly bends forward in the conning tower, and the ever-watchful C.P.O. below trims ship to suit. There is a click of a lever, a roar of compressed air, and a torpedo leaps towards its unsuspecting prey. Suddenly there is a blinding flash and a crash—"

The dreamer's wife had come into the room and switched on the light, and the paper had fallen to the floor. The dreamer rubbed his eyes, thanked Heaven devoutly for the real R.N.A.S., the R.F.C., and other institutions of an effete aristocracy, even including the Censor. But one cannot help feeling sorry for officers of whom alleged war correspondents write more or less in the manner which caused this nightmare.—C. G. G.

ployees, 2nd contribution), 13s. 6d.; Vickers, Ltd. (Aero Mechanics, 8th contribution), 7s. 9d.; (9th contribution), 10s. 9d.; Mr. A. Shrubsole, 10s. 6d.; Mr. J. Gumbleton Currie, 10s. 6d.; Mrs. Clifford, 10s.; Mrs. H. P. Filgate, 10s.; Miss Rogers, 10s.; Mr. R. Howlett, 10s.; "Boss," 5s.; Miss E. M. Booth, 5s.; Miss Oldersham, 5s.; Mr. and Mrs. Tuars, 5s.; Miss Randolph, 5s.; Miss Gardner, 5s.; Mr. H. Da Vuy, 5s.; Anon., 3s.; G. O. and T. Gilder, 2s. 6d.; Miss Russell, 2s. 6d.; Mr. A. de Moleyns, 1s. 3d.; Mrs. Crouch, 1s.; Anon., 1s. Total for week, £114 11s. 11d. Grand total to date, £327 13s. 2d.

Further contributions should be sent to Mrs. Sueter, The Howe, Howe Hill, Watlington, Oxon.

The Busk Memorial.

Several letters have been received making enquiries about the proposed Fund in memory of the late Mr. Busk, who was burned to death in the air on a R.A.F. biplane lately. Undoubtedly Mr. Busk's sincere work for the progress of aviation entitles him to a memorial of some sort, but just at this period most people will agree with the writer of the aeronautical notes in the "Observer," signed "C. W.," who pointed out that those who have money to spare at present can devote it to purposes calculated to do more immediate good than a purely academic memorial could do.

One gathers that there is some idea of founding a Busk Memorial Scholarship for aeronautical research at Cambridge. Such a scholarship would doubtless be a good thing in years to come, but at present there are no facilities for aeronautic research at Cambridge, and anyhow the money could be turned to better uses in relieving the present necessities of those in need of any kind, whether widows or orphans, people out of work owing to the war, wounded men in need of luxuries, or fighting men in need of bodily comforts.

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A DEFENDER OF THE R.A.F.

The following letter, dated December 6th, has been received: "I am sorry that I have not had an earlier opportunity of sending you a mild protest against certain utterances of yours in THE AEROPLANE of November 18th.

"You say that in the previous Sunday's 'Observer,' Mr. C. C. Turner points out 'the failure of the R.A.F. to play as useful a part as it should have done.' You continue: 'Reference was made in this paper (THE AEROPLANE) recently to the failings of the latest standardised official designs. Mr. Turner, greatly daring, refers specifically to the R.E.5 and the B.E.2c.' "Is it quite fair to mislead your trusting readers in this fashion? For the article in the 'Observer,' to an unbiased mind, never once 'points out the failure of the R.A.F.' The sequence of your two next sentences, re your own references to the 'failings' of official designs, and Mr. Turner's specific references to the R.E.5 and the B.E.2c, implies that it was to their 'failings' that he also referred. Yet what Mr. Turner wrote of the R.E.5 was merely that 'it is a very heavy stable machine, which is steady in a wind, but said to be a difficult lander.' Nothing more.

"Of the B.E.2c he said that it is giving great satisfaction; that it is worthy of note that its high degree of stability is proving so useful in battle; that it has a number of intricate devices which delay deliveries and are apt to get out of order; and that the machine rolls about in a wind but does not upset, and the pilot can give his attention to reconnoitring and fighting.'

"Thus he speaks of more virtues than defects in both machines. Yet your readers would be led to believe that Mr. Turner had been 'slating' the R.A.F. products as vigorously as you so often do yourself. Nor do I say you are wrong in your opinion of them; but I do not think you should give the impression that that opinion had been ardently backed up by an authority like Mr. Turner, with only that article as justification.

"You will understand that I am as unknown to the 'Observer's' contributor as to yourself, and that I write merely as a reader of THE AEROPLANE, who would be very sorry to see the defect of unreliability added to the few minor blemishes of that inexpensive little paper—I had almost written 'modest,' but Truth forbids! For, surely, no paper could be less shy of proclaiming its own good points; indeed, its quaint vanity could not be more pronounced if it were edited by one of my sex instead of yours!"—(Signed) VERA GILBERT.

A Reply

It is so unusual to find anyone defending the Royal Aircraft Factory, even to the limited extent shown in this letter, that it seems worth while to reply in some detail, for, as a rule, criticism of the R.A.F. simply produces anonymous letters which are merely abusive and not in the least argumentative.

In the first place, one would point out that when Mr. Turner was writing for that excellent paper, the "Observer," he had to word his articles so that they would pass an editor who knew less of aviation than he did, and so he had to moderate his wording, and thus to some extent he masked his real meaning. In spite of this he has managed to get more home truths about the Royal Aircraft Factory into print than has any other journalist outside this office. Also, writing for the general public, he had to generalise, and had to avoid technicality, which obviously cramped his attack.

In the passages quoted he mentioned certain good points about the R.E.5, which have also been mentioned in this paper. Incidentally, a machine, or a person, may have "failings" without being a "failure," though in the cases of the R.E. and the B.E.2c the failings are so important as to constitute the failure of both machines. My criticisms of these aeroplanes are based on the personal experience of several of the most experienced and best pilots in this country, or in the world.

Mr. Turner says the R.E. is "heavy" and "a difficult lander." Many important good points would be necessary to outweigh these evils. The R.E. is rather "steady"—up to a point—than actually "stable." It is inclined to spin badly on a turn, it is very bad for observation, it is very slow for its power, it is impossible to land it in anything except an enormously big field, and its solitary good point is that it climbs

fairly well. In proportion to the expense of its production it is a terrible failure.

Of the B.E.2c Mr. Turner says it is "stable" and it "does not upset, and the pilot can give his attention to reconnoitring and fighting." Against this he says "it has a number of intricate devices which delay deliveries and are apt to get out of order." Surely anything which delays deliveries in this time of stress should be condemned straight away, if, as is the case, these "intricate devices" can be replaced by simplified designs, and when, on top of this these devices "are apt to get out of order" the machine is a self-confessed failure. In a privately owned touring machine stability is nearly the most important point, but in war speed, climbing power, and controllability are far more desirable. Therefore, even on Mr. Turner's points the B.E.2c is condemned.

A Matter of Speed.

But he omitted to mention that it is between 15 and 20 miles an hour slower than the modern German machines, so what possible use could it be on reconnaissance? What chance of escape would its pilot have if attacked by fast German biplanes (which also possess nearly double its climbing speed), when perhaps 20 or 30 miles behind the German lines?

Except for purposes of artillery fire control such a slow machine must, on the face of it, be absolutely useless, and important as such work is, it is not yet worth while to turn out large numbers of machines suitable only for that purpose.

Besides this, alterations and mistakes in R.A.F. drawings, and further alterations in the alterations, have delayed deliveries to a dangerous extent, without in the least improving the speed or climb of the machine.

But for the firms who obstinately went on with their own designs when the War Office would order nothing but the earlier B.E.2, the R.F.C. would to-day, at this most critical period of the war, be in a very grave state owing to lack of machines. Moreover, even now, there are constructional details about the B.E.2c which in themselves constitute a danger to the pilots who will have to fly it. The worst of the present designs of any of the independent aeroplane makers are safer to fly than a B.E.2c built to R.A.F. specifications would be.

Probably every aeroplane in the world could be improved and made safer in one way or another, but the private maker is always willing to make alterations which are pointed out by pilots of experience, whereas the R.A.F. has always placed the opinion of its pseudo-scientists before the experience of practical men. The graves of R.F.C. officers and men are monuments to the grim fact.

Fortunately, we have private designs which have "made good," and large supplies of Avros, Sopwiths, Shorts, Wights, Vickers gun-carriers, Bristol scouts, Martinsyde scouts, and various others are coming through in quantities, for both the Navy and Army, but if the authorities at the War Office had abolished the R.A.F. three years ago, or even if they had dropped all R.A.F. designs four months ago, and had ordered plain, straightforward flying machines, we should have been very much better off. One can only repeat what has been said so often before, namely, that the R.A.F. is a menace to British Aviation.

"Not unto us the Praise."

Perhaps it is this habit of saying "We told you so," which causes the writer of the letter to charge THE AEROPLANE with vanity. May I, therefore, repeat a fact stated recently? Namely, every statement and every argument used in these attacks originates with men of the greatest experience in this country as aviators, designers, or constructors. As editor of the paper I have merely been their mouthpiece, collecting their facts and putting them together so as to make one homogeneous whole. They, not I, have prophesied truly. I take no credit for my part of the work, I merely express my satisfaction that I have had the honour of placing on record the unanswerable statements, arguments, and charges of men who know far more than I do, and infinitely more than the staff of the R.A.F., but who are so situated that they cannot state their cases in public.

If by following this plan of campaign we can save the lives of some of our naval and military pilots on active service, or if by securing for them better aeroplanes and so increasing their efficiency we can effect a consequent saving of life among our forces fighting on sea or land, nothing else matters very much.—C. G. G.

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From the "London Gazette," December 8th, 1914.

ADMIRALTY, December 4th.

The undermentioned probationary flight sub-lieutenants have been confirmed in the rank of flight sub-lieutenant: Irving Henry Bebbly Hartford. Dated September 7, 1914. Charles George Verner. Dated September 11th, 1914. Kenneth Stephens Savory. Dated September 11th, 1914. Marmaduke Scott Marsden. Dated September 11th, 1914.

The undermentioned temporary probationary flight sub-lieutenants have been confirmed in the rank of temporary flight sub-lieutenants: Noel Bannister Tomlinson. Dated September 8th, 1914. George Cyril Colmore. Dated September 11th, 1914.

WAR OFFICE, December 8th.

ESTABLISHMENTS.—Royal Flying Corps (Military Wing).—The undermentioned appointments are made:—

Flying officers to be flight commanders.—Dated November 28th, 1914: Captain Harry T. Lumsden, the Queen's Own Cameron Highlanders, and Captain Arthur D. Gaye, the Bedfordshire Regiment.

Flying officers to be flight commanders and to be temporary captains. Dated November 28th, 1914: Lieutenant Edgar R. Ludlow-Hewitt, the Royal Irish Rifles; Lieutenant Dudley S. K. Crosbie, Princess Louise's (Argyll and Sutherland Highlanders); Lieutenant Kenlis P. Atkinson, Royal Artillery; Lieutenant Baron T. James, Royal Engineers; Lieutenant E. L. Conran, 2nd County of London (Westminster Dragoons) Yeomanry, Territorial Force; and Lieutenant Edward R. L. Corballis, the Royal Dublin Fusiliers.

* * *

A Supplement to the "Gazette" of December 8th, published on December 9th, contains the following military appointment:—

WAR OFFICE, December 9th.

REGULAR FORCES.—Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing):—Second Lieutenant (on probation) the Hon. William F. Forbes-Sempill (Master of Sempill) is confirmed in his rank.

* * *

In a Supplement to the "London Gazette" issued on December 9th, the War Office published the following revised and corrected list of names appended to Sir John French's Despatch dated October 8th, 1914 (including those published for the first time in the "London Gazette" dated December 4th, 1914):—

The following is, then, the complete list of officers and N.C.O.'s of the Royal Flying Corps mentioned in despatches:—

Lieutenant K. P. Atkinson, Royal Field Artillery.
 Captain R. A. Boger, Royal Engineers.
 Lieutenant I. M. Bonham-Carter, Northumberland Fusiliers.
 Captain U. J. D. Bourke, Oxford and Bucks Light Infantry.
 Captain A. B. Burdett, York and Lancaster Regiment.
 Brevet Major C. J. Burke, Royal Irish Regiment.
 Lieutenant (temporary Captain) G. I. Carmichael, Royal Field Artillery.

Lieutenant A. Christie, Royal Field Artillery.
 Lieutenant E. L. Conran, 2nd County of London Yeomanry.
 Captain G. W. P. Daves, Royal Berkshire Regiment.
 Lieutenant L. Dawes, Middlesex Regiment.
 Captain E. W. Furse, Royal Field Artillery.
 Lieutenant H. D. Harvey-Kelly, Royal Irish Regiment.
 Captain H. C. Jackson, Bedford Regiment.
 Lieutenant P. B. Joubert de la Ferté, Royal Field Artillery.
 Lieutenant D. S. Lewis, Royal Engineers.
 Brevet Major C. A. H. Longcroft, Welsh Regiment.
 Lieutenant W. H. C. Mansfield, Shropshire Light Infantry.
 Lieutenant G. W. Mapplebeck, 4th (King's) Liverpool Regiment.

Lieutenant W. G. S. Mitchell, Highland Light Infantry.
 Lieutenant M. W. Noel, Liverpool Regiment.
 Lieutenant C. E. C. Rabagliati, Yorkshire Light Infantry.
 Brevet Major G. H. Raleigh, Essex Regiment.

Brevet Major J. M. Salmond, Royal Lancaster Regiment.
 Lieutenant R. G. D. Small, Leinster Regiment.
 Lieutenant (temporary Captain) A. H. L. Soames, 3rd Hussars.

Second Lieutenant N. C. Spratt, Royal Flying Corps (S.R.).
 Brevet Major (temporary Lieutenant-Colonel) F. H. Sykes.
 Captain F. F. Waldron, 19th Hussars.
 Second Lieutenant C. W. Wilson, Royal Flying Corps (S.R.).
 No. 18, Flight-Sergeant C. E. Cullen, Royal Flying Corps.
 No. 25, Flight-Sergeant H. Goodchild, Royal Flying Corps.
 No. 9, Sergeant-Major D. S. Jillings, Royal Flying Corps.
 No. 30, Sergeant W. Jones, Royal Flying Corps.
 No. 346, Sergeant M. Keegan, Royal Flying Corps.
 No. 775, Corporal S. T. Kemp, Royal Flying Corps.
 No. 808, Sergeant-Major E. J. Parker, Royal Flying Corps.
 No. 3, Sergeant-Major J. Ramsay, Royal Flying Corps.
 No. 816, Flight-Sergeant A. M. Saywood, Royal Flying Corps.

Corps.
 No. 151, Sergeant A. Wilson, Royal Flying Corps.

The ranks given above are those held at the date of the despatch, but many of those mentioned have since been specially promoted.

* * *

A Second Supplement to the "Gazette" of December 8th, published on December 10th, contains the following military appointments:—

WAR OFFICE, December 10th.

REGULAR FORCES.—Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—The undermentioned second lieutenants (on probation) are confirmed in their rank: J. R. Howett, E. L. M. L. Gower, E. K. Davies, M. B. Blake, G. C. Gold, C. H. Saunders, T. F. Rutledge, and R. M. Pike.

* * *

From the "London Gazette," December 11th, 1914.

ADMIRALTY, December 7th.

ROYAL NAVAL AIR SERVICE.—Temporary Flight Sub-Lieutenant Noel Bannister Tomlinson has been promoted to the rank of flight lieutenant for temporary service. Dated December 5th, 1914.

* * *

A Third Supplement to the "Gazette" of December 11th, published on December 14th, contains the following military appointments:—

WAR OFFICE, December 14th.

REGULAR FORCES. COMMANDS AND STAFF.

General Staff Officer, Third Grade.—Captain Clive Mellor, Royal Engineers, vice Lieutenant (temporary Captain) H. R. P. Reynolds, Royal Engineers. Dated December 3rd, 1914.

ESTABLISHMENTS (Royal Flying Corps).—Aeronautical Inspection Department.—Major John D. B. Fulton, C.B., Royal Artillery, Chief Inspector, to be graded as a wing commander, and to be temporary lieutenant-colonel. Dated December 1st, 1914.

Central Flying School.—Captain (temporary Major) Tom I. Webb-Bowen, the Bedfordshire Regiment, assistant commandant, to be graded as a wing commander and to be temporary lieutenant-colonel. Dated December 1st, 1914.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—Royal Flying Corps (Military Wing).—Second Lieutenant (on probation) James Valentine is confirmed in his rank.

NAVAL.

The following appointments were made at the Admiralty on December 9th:—

Royal Naval Air Service.—Flight-Lieutenant C. R. F. Noyes, to the Air Department, Admiralty, to date November 6th.

Mr. W. U. Pletts, entered as probationary flight-sub-lieutenant for temporary service and appointed to the "Pembroke III," for Royal Naval Air Service, to date December 7th.

Lieutenant.—J. J. Warner, R.M., to the "Pembroke," for armament duties, R.N. Air Service.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Acting Flight-Lieutenants L. C. Downing and D. C. S. Eville, and Acting Flight-Sub-Lieutenant S. Medicott, to the "Pembroke III," for course of training at the Central Flying School, to date December 12th.

* * *

It is now, unhappily, practically certain that Flight-Lieut. Beevor, R.N.A.S., and his passenger, Lord Annesley, are both dead. They had been missing since November 5th, when they left England on a Sopwith biplane (100-h.p. monosoupape Gnome), piloted by Lieut. Beevor, to resume their duties at the front. Hopes that nothing worse had befallen them than being prisoners of war were inspired by the statement of captured Germans that they had been brought down by the enemy at Ostend without losing their lives. Unfortunately, official information shows this to be incorrect. The aeroplane was shot down by the Germans at Dixmude, both occupants being killed.

At first it was thought that they had been lost at sea, as the day was not very clear. Further, it was Lieut. Beevor's first flight with the new type engine, which is rather delicate in its adjustment, and needs knowing to be thoroughly reliable, so it was thought that he might have accidentally stopped the engine in mid-Channel when altering the air adjustment to suit the sea air. The most curious thing about this affair is that the fliers did not land on reaching the French coast, but apparently flew right on to the firing line without stopping to report their return from England.

Lieut. Frank Beevor was a fine specimen of the adventurous British officer. He served in the ranks of a line regiment. Then he obtained a commission in the Reserve of Officers of the 10th Hussars, and proved a highly popular and efficient officer. During the Balkan War he obtained long leave, and spent it as the servant of a Turkish officer, going through all the fighting from Kirk Kelisse right back to Constantinople. On his return he took to flying as a sport, learning at the Vickers School at Brooklands, and later joined the R.F.C. Thence he transferred to the R.N.A.S., and did some very good work in Belgium. He was a daring flier, but he had a sound head and knew what he was doing, so he had every prospect of escaping accident, and of attaining distinction. He was very well liked by everyone, and he will be greatly missed in the R.N.A.S.

Francis, sixth Earl of Annesley, offered his services to the Admiralty soon after the war broke out, and received a commission as sub-lieutenant, R.N.V.R. Lord Annesley was a skilful motor-car driver, and his ability found employment in one of the armoured cars under Commander Samson, R.N. He took part in the defence of Antwerp. Lord Annesley visited his home at Castlewellan, County Down, for a few days' leave, and it was while returning to duty that he met his death. Educated at Eton and Trinity Hall, Cambridge, he succeeded to the title in 1908, and the following year married Evelyn Hester, daughter of Mr. Alfred Edward Miller Mundy, of Shipley Hall, Derby. He was a fine sportsman, and his taste for adventure is evident from the fact that when little more than a boy he went round Cape Horn serving as a sailor before the mast. He was also a noted big game shot, and was a member of the Ulster Unionist Council.

* * *

The mail steamer "Oranje Nassau," outward bound for Flushing, picked up on December 14th an officer and a mechanic of the Royal Naval Air Service in the North Sea. The machine was sighted floating on the water between the Kentish Knock and Galloper Lightships by the look-out on the "Oranje Nassau." The steamer lowered a boat. The officer at first declined to leave the seaplane, fearing that he might be interned in Holland, but finally he and the mechanic agreed to go on board. The machine, the engine of which had broken down, was abandoned. The British authorities were duly informed. The steamer arrived at Flushing an hour late. Both the officer and the mechanic were to return to England as soon as possible.

* * *

The "Aldeburgh Post," of December 11th, reports that some excitement was caused in the district surrounding Leiston on Thursday afternoon last by the appearance of "what looked like a large aeroplane." The pilot was forced to land by the intense cold. "The biplane was of the latest Naval pattern"

(presumably, a Vickers gun-carrying biplane, 100-h.p. monosoupape Gnome) and "was in charge of an officer of the Naval Flying Corps" (sic). The occasion was made a local festival, and a collection, which realised £2, was made on behalf of one of the Belgian relief funds. After some attention had been given to the motor, the machine eventually departed in a northerly direction.

* * *

The Rev. L. J. Walters, vicar of Hoo, near Rochester, has lately been appointed chaplain of the Naval Air Station at Hoo on the River Medway. It is reported on inexperienced evidence that when he conducts a service he does so in the "aerodrome," and uses the "seat" of the airship as his pulpit. The "seat" of an airship sounds rather like talking about the "fireplace" of a warship.

MILITARY.

The well-earned promotion of Lieut.-Col. Fulton, C.B., will be noted with pleasure by all who were in touch with aviation in its early days. Colonel Fulton was the first of our military aviators, and did splendid work in command of the aeroplane section of the old Air Battalion when that force was first formed. Later, at the Central Flying School, and more recently as chief of the Aeronautical Inspection Department, he has done much to increase the efficiency of the R.F.C. He was also the first military aviator to qualify for the Royal Aero Club's "Superior Brevet."

* * *

Colonel Webb-Bowen, also promoted to Wing-Commander, with rank of Lieut.-Colonel, continued with great success the work began by Colonel Fulton in the mechanical side of the Central Flying School, and as assistant-commandant to Captain Godfrey Paine, C.B., M.V.O., R.N., has maintained the high level of efficiency and discipline for which the C.F.S. is remarkable. He has, further, inaugurated many new developments of high value.

* * *

Mr. J. T. C. Moore-Brabazon, whose appointment as 2nd Lieutenant, R.F.C., on probation, was gazetted last week, is one of the genuine pioneers of flying in this country. It was he who, on the earliest Short biplane with a 60-h.p. Green engine, won the "Daily Mail" £1,000 prize for being the first British subject to fly a mile over a closed circuit on an all-British aeroplane. After this, he flew a little at the Royal Aero Club ground at Leysdown, and also at Eastchurch. He gave up flying altogether in 1910. He has, however, remained a member of the Royal Aero Club Committee ever since and has done much useful work whenever opportunity has offered. His return to aviation, with the prospects of active service, indicates the high sense of duty which is so characteristic of the better class sportsmen in this country.

* * *

An officer in the Guards sends to his father a letter in which he says:—

"We are in the best of spirits, and very cheery. We were awakened on Sunday morning by a huge explosion, and we found it was a German, flying in a French aeroplane. He dropped six bombs on the town a kilometre from this village. One did not explode, but buried itself in a field 500 yards from anywhere. It is a big yellow thing, the size of a football. Another killed nine men and severely wounded nine, and wounded several others, making a total of about thirty casualties. One went through a house, and one burst in a back garden, causing much damage to windows and roofs of adjoining houses, and the other two fell in a road, making a hole about 6 ft. in diameter and about 4 ft. deep. He was evidently trying to hit the railway station, but made bad shots. So we have seen some of the dangers of the air."

* * *

An officer writes on December 3rd:—"The King has been here. Think of it! In pouring rain, though the sun was nearly breaking through, he walked right down through us all lining the streets on each side. He looked at each officer, each one of us, and gave us a smile and a nod. Goodness knows how we managed to keep stiff at the salute. Then when he got to the end of each company, we held our hats in the air, and gave three such cheers as have never been beaten.

I suppose none of us will ever forget it, or experience such a moment again in our lives. It was brave of him to come here, a very few miles from the firing line, and taking the chances of submarines on the way over, and of aeroplanes and spies here. If he wanted to help us all and put new life into the tired ones, he has done it finely.

[It is indeed good to find the old loyal spirit so strong, and it is encouraging to those who have fought for aviation to find that the officers of the line now regard aircraft definitely as dangerous weapons. The task of the R.F.C. in constantly guarding the King against hostile aircraft can have been no light one.—Ed.]

* * *

Officers and N.C.O.'s. of the R.F.C. home on leave all bear witness to the gratitude of the men for the ample supply of comforts they receive from this country through the R.F.C. Comforts Fund. Although at present every man has all he needs in the way of wearables, eatables and smokeables, it is well to remember that present supplies are not inexhaustible and that further contributions should be sent to Lady Henderson, 8, Chesterfield Gardens, S.W.

* * *

A British aviator who has flown over gun-fire on many occasions says that, while the recently published description of the explosion of a shell some way off in the air which likened it to a sneeze indicates the lack of vicious noise, if one takes the noise of the Gnome (when one is actually flying as a constant, the actual explosion of a shell at a distance might be likened to "the noise made by popping off a ginger-beer cork under a blanket in an empty room next door." By the exercise of a little imagination one may gather quite a fair idea from this of what the bursting of a moderately close shell sounds like.

* * *

An air-mechanic of the R.F.C. writes:—"We are very up-to-date here, as we get quite a lot of our letters by aeroplane. . . . We captured a German machine the other day. They are well made, with bullet-proof seats made of the very best steel. We are sending it to England this week to put on show. . . . Lord Roberts died close to us, and we were in the funeral procession."

* * *

A private of the London Rifle Brigade writes:—"We had 'German shrapnel' at luncheon each day. There are numerous German aeroplanes about, and as I have myself seen three brought down, they must have lost heavily in air-craft."

* * *

A private soldier on active service states that one of the two German aviators, who were captured by French territorials and who attempted to escape by killing their guards, was Lieut. Aviator Lengeling of the 161st German Infantry.

This soldier confirms the report that bombs have been dropped on Hazebrouck, killing 17 people, including 8 English. He says that the town on which he is billeted is continually being flown over by Blériots, B.E.s, Sopwiths,

Avros, and Henri and Maurice Farmans. Among the latter was a 120-h.p. Shorthorn with a machine gun. The corps fly in all weather. On one occasion three Blériots and a Henri Farman were out in pouring rain. He states that the pilot of one of the Blériots had lost his muffler, which was streaming out from the rudder wires, so it was fortunate that he did not happen to be on a pusher machine.

* * *

A private in one of the London regiments, who was, prior to the war, a keen student of aviation, writes as follows:—

"Being a pretty old subscriber, I take the liberty of remarking how impossible I have found it out here in the trenches without your excellent little paper, so it is now being sent out regularly to me. Thanks to my knowledge of the machines of all the forces engaged, I have been able to prevent on one occasion our men from attempting to bring down one of our own aviators; not that there was any likelihood of any of them hitting him.

"Has it ever occurred to you that aeroplanes have shown their usefulness in a very novel way—namely, causing an awful wastage of ammunition, especially among the Germans, who simply can't resist sending 'Johnsons,' shrapnel and a perfect hail of bullets at an Allied aeroplane, yet they have never hit one since I have been here.

"I have noticed that the B.E.s in a wind arid about like balloons owing to their being terribly underpowered with their Renaults, while the Sopwiths and Avros just seem to cut through it. The only French machines I have seen are standard Blériots, which seem pretty slow, some Henri Farmans belonging to the British, and one of the old 'mechanical cows.'

"I am at present in hospital with my feet frost-bitten and the pain is awful as the circulation gradually comes into the toes again, so what our poor aviators must suffer up in the cold I can't imagine, but we chaps in the trenches pity them for we at least have fires.

"An L.V.G. tractor of latest type flew over us for half an hour the other day. She seemed pretty fast, but for speed she could not touch the Sopwiths. She was obviously out looking for our artillery, and they've been six weeks trying to find 'em and haven't struck a single one yet.

"I am glad to say that though, of course, THE AEROPLANE is not as popular as the daily papers, it goes the rounds in the trenches, and on being returned to me is generally pretty battered and torn, which shows it is well read."

[A very welcome letter, as showing the sympathy which exists between the various branches of the Service. The aviators, being able to return to comfortable quarters after finishing their work, feel sorry for the poor chaps in the trenches, and the gunners, comfortably hidden, feel sorry for both. The cavalry feel sorry for the poor mud-crushers, and the infantry feel sorry for a chap perched up on a beast that hasn't any brakes and whose engines can't be switched off, and they both feel sorry for the mechanical transport driver jolting along day and night on a solid-tired lorry, and he pities them because he always has a nice warm engine to heat him up.



The Curtiss-Wanamaker boat "America," built for the Trans-Atlantic passage, flying over Lake Keuka before the war. She has since flown well over British waters.

The R.A.M.C. pities and nurses the lot. And the fact that they all have room in their hearts to pity anyone besides themselves shows not only the big heart of Mr. Thomas Atkins, but that he isn't yet reduced to the last stages of exhaustion.—Ed.]

* * *

A non-combatant writing from the front says:—

"The Germans have distributed leaflets from aeroplanes over the Indian troops, written in Hindi (which is a character few Mahomedans can read), with a grammatical mistake in every line, sometimes two, saying that the Shaikh Ul Islam has on the occasion of the Am Id (a non-existent festival) at Mecca (where he has not been, and does not live) declared a Holy War on the Allies—and urging them to revolt.—[This is a priceless example of science run to seed, and is almost worthy of the R.A.F. One can picture the pleasure of the Herr Professor who composed the document on fancying his study of Hindi of real use at last.—Ed.]—We have issued a counter appeal in good Urdu, to the Indian troops, and a counterblast, in good German, by aeroplane, in the shape of a message to the Germans opposite us telling them, in the name of our Indian troops, that the Indians despise their underhand (overhead?) methods, and consider the Germans their foes and a set of knaves.

"The bombardment we saw yesterday stopped as we passed, and there has been no more since. Our guns were firing continuously in the afternoon, and may have found the malignant gun and silenced it. This is all the more probable as one of our aviators came in yesterday having exactly located a large number of enemy guns and troop trains, which latter are apparently massing behind the German lines. This may indicate a retirement soon. The information is most useful, and was obtained by a splendid piece of work, as batteries are most perfectly concealed in trees, behind hedges, or in pits, and one can get to within 300 yards of them without seeing them; besides flying in this weather is the coldest pursuit conceivable."

* * *

A non-combatant at the front writes:—"An enemy aeroplane, a brand new one, came down yesterday with the radiator cracked from freezing of the water and was captured by a chaplain, who was burying dead, and two men with rifles. The two German officers in it had on them copies of the Hindi inflammatory leaflet addressed to Mussulmans.—[The chaplain's action seems a trifle ultra vires.—Ed.]

* * *

From a diary seen by a "Times" representative:—

A flying man from Headquarters came out to take away the German aeroplane which came down here the other day. He said that after two hours' flying he came down absolutely frozen all over, not only hands and feet, and had at once to lie down where he came down as it was impossible to walk. It took ten minutes for the blood to circulate again, and that ten minutes was agony, he said. He said that when shrapnel is fired at you, you feel the machine jump at each explosion. It does not, however, matter much if the wings are hit, as one of our aviators had over 200 holes in his the other day. If the engine or radiator is hit, it is of course another matter. . . . It rained in the night and then froze, but the flying man has got his aeroplane off, packed in a trailer behind a lorry. He says the German aeroplanes are magnificently made; they have metal wings.

[Presumably the diarist meant metal spars.—Ed.]

FRANCE.

The evening communiqué of December 10th says:—

The general situation remains unchanged. Yesterday our aviators again threw bombs successfully on the station and aviation sheds at Freiburg, in Breisgau. Sixteen bombs were dropped. In spite of a lively cannonade, the aviators returned safely.

* * *

The following war news, officially circulated through German wireless stations and received by the Marconi Company on December 9th, says:—

Main Headquarters reports this afternoon as follows: To the west of Reims a farm, although flying the Red Cross flag, was bombarded and set fire to by our troops, as we had ascertained without doubt, by means of photographs taken by aviators, that behind the farm was hidden a French battery

[It would be interesting to have a correct French version of this affair. Can any French reader in the district of Reims oblige?—Ed.]

* * *

It is with sincere regret that one has to confirm the death of M. Marc Pourpe, reported last week. He was appointed to Escadrille Morane-Saulnier No. 23, together with MM. Garros, Gilbert, and Bobba. The accident was apparently caused by the overloading of his machine, a Morane-Parasol, which side-slipped on a turn just as he was starting out on reconnaissance. A similar accident occurred to M. Delaplane, who was killed on a Morane at Villacoublay soon after the outbreak of war. It is said that M. Garros does all sorts of tricks on a similar machine, but he takes care never to overload. Marc Pourpe was beloved by all who knew him for his frank and charming personality, and his flying was of the highest order. One of his finest exploits was his Egyptian flight a year or so ago. Quite recently he was mentioned in Army Orders.

* * *

A friend in the French flying corps writes that the weather is rotten—fog and rain every day—and very little doing, except at odd times. He states that the Corporal-aviator Noel, of Blériot escadrille No. 30, is amazing his comrades more and more every day by persisting in regulating the fire of a big battery, during odd clear hours, right under fire from a heavy Boche fort, invariably landing amid a shower of projectiles. He has also brought the art of landing by the light of a petrol flare to a fine art.

* * *

A reader of this paper recently met in the train on her way to Paris an American lady who is engaged to an officer of the Italian air service. From her she gathered that one of the new Italian airships—seemingly a Parseval—was not so satisfactory as the earlier Italian-built ship—perhaps a Forlanini—with which this officer served. This reader also met a member of the Curtiss Co.'s staff, who is acting as a special messenger in France. A third meeting was with M. Pierre Custot, an R.E.P. pilot. He was limping as the result of a pancake landing, or, as he put it, "as a Yorkshire pudding." He has been noted for the Médaille Militaire. He had seen MM. Gilbert, Brindejone des Moulinais, and Garros recently. M. Custot remarked that woolly helmets were of little use to aviators, and that rubber ones would be a great comfort. The regulation black waterproof coats are very unsatisfactory. The "messenger" mentioned above has had a waterproof coat made with a camel-hair cloth lining, which is loosely buttoned in. He finds it most comforting. Friends of our Service aviators should note this.

* * *

News comes to hand in an indirect fashion that Mr. Howard, who joined the French flying corps when war broke out, and who was reported missing soon afterwards, is wounded and a prisoner in the hands of the Germans. It is sincerely to be hoped that this later report is correct.

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The "Telegraph's" "own correspondent" at Boulogne reported on Tuesday, December 8th, as follows:—"Yesterday afternoon a German Taube flew over the towns of Bar-le-Duc and Hazebrouck. At the latter town the aviator threw several bombs, killing a soldier and injuring fifteen people. Forced to turn back at Bar-le-Duc, owing to a fierce rain of shell, the aviator reached the Argonne district. When near Chaumont-sur-Aire a shell from a French 'seventy-five' struck the machine, which was instantly in flames. When the remains were searched later there were found five pointed German helmets. The President had been in the town the day before, and had left suddenly in the evening."

[Possibly the German aviator carried a store of helmets with him in expectancy of suffering from swelled head. One also wonders mildly why one "Taube" should bother to fly from Hazebrouck to Bar-le-Duc and into the Argonne. It is much as if an aviator turned back at Margate, flew to Harwich, and was brought down at Yarmouth. It would have been so much simpler to have landed in his own lines about half a dozen miles away from either place. Really the "Telegraph" should find a more intelligent correspondent.—Ed.]

The special correspondent of the "Times" at Nancy reported on December 10th:—

"On December 4th a German warplane flew over Commercy and dropped four bombs near the station. Three of them fell on the line without doing much damage, the other plumped into the Meuse.

"On the 5th a Taube made its appearance over Bar-le-Duc, coming from the north-east. At first it was flying impudently low, but a volley from the garrison soon sent it to a more respectful height, and it moved off quickly in the direction of Verdun. At Chaumont-sur-Aire, a few miles short of the fortress, it was brought down by a shell from a 75. The machine was entirely destroyed by the fire caused by the explosion of the petrol-tank, and all that was left of it and its pilot and observers were the charred remains of three aviators' helmets. [This is evidently the true story of the "Telegraph's" yarn from Boulogne.—Ed.]

"The growing frequency of these aeroplane flights in the district probably means that their spy system has more or less broken down, and that they are obliged to depend on their flying corps for information. It is also possible that they have got wind of the visit to the district of M. Poincaré, who two days before went to Sampigny to see what the Germans had done to his native town.

"Meanwhile, the French are constantly carrying out reconnaissances on their own account. An officer of the Verdun flying corps who lately paid a visit to Montmedy, 25 miles due north, reports that the village has suffered very little from the German occupation."

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The "Temps" reports that a German aeroplane flew over Hazebrouck on Sunday morning, December 6th, and dropped bombs behind the station. One of them killed six civilians, three of them children, and also wounded ten persons. The aeroplane next flew over Steenbecque, where it dropped bombs, injuring several people. Later on it returned over Hazebrouck and threw two more bombs, which only did damage to property.

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On Monday, December 7th, it was reported that there was another aeroplane attack on Hazebrouck, when bombs were dropped on the junction of the Armentières-Dunkirk and Ypres-St. Omer-Calais railway lines.

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A French aviator on December 14th set on fire a German train at the station of Pagny-sur-Moselle.

* * *

A correspondent of the "Daily Express" met M. Pégoud recently in Paris, and learned some interesting news of his doings since the start of war. M. Pégoud related how he abandoned his American tour on the outbreak of hostilities, getting his machines from Hamburg back over the French frontier only just in time. He is certain that what the Allies lack in aeroplanes they make up for in fine pilots, and he has a delightful contempt for Zeppelins and all their relations. He has dropped 620 bombs since August among Prussian troops, besides destroying three kite-balloons and generally annoying German forts. On one occasion he was forced to land through losing much petrol via a bullet-hole, which he says he plugged with a rubber stopper carried for such an emergency, and had difficulty in getting into his own lines with a badly damaged wing.

On another occasion he came down through lack of petrol right behind the German lines, and as all the liquid fuel in the local village had been commandeered by the enemy, he had to hide his machine. A little peasant lad volunteered to get some from a garage three miles away. M. Pégoud related, with some feeling: "It was a dangerous journey for the little chap, but he walked out through those German camps with the courage of a saint, and I felt like a coward for letting him go. In the darkness before dawn back he came, tugging a five-litre tin as big almost as himself, and set the precious liquid before me with a smile. Then he hurried away, as he said, 'to keep a watch for Uhlans.' I had no sooner poured the petrol in the tank and dragged my machine into the open than I saw him tearing frantically back. 'Hurry! Uhlans coming.'

By erratic flying M. Pégoud succeeded in deluding the Uhlans into the belief that he had been hit, causing them to cease

fire, and he finally succeeded in escaping, after being violently shelled by a German fort over which he chanced to pass.

GERMANY.

A telegram to Amsterdam on Thursday last from Freiburg stated that three hostile aviators flew over Freiburg on Wednesday, December 9th. They were seen at 3.30 p.m., coming from the western side, and they went in the direction of Zähringen. During their flight heavy gun and rifle fire was directed upon them, compelling the airmen to disappear. The telegram adds that the bombs dropped caused no damage.

It was reported from Copenhagen on Friday last that the last raid made by French aviators on the airship sheds at Freiburg-im-Breisgau resulted in great damage to the sheds. The German official report admits that the French airmen got away safely after dropping ten bombs, which they say only caused slight damage. It is reported that a number of employees were killed.

The German war news officially circulated through German wireless stations and received by the Marconi Company on December 10th said:—

Main Headquarters reports this afternoon as follows:—Yesterday three of the enemy's aviators dropped about ten bombs on the "open not situated within the range of operations" town of Freiburg. No damage was done. The incident is merely mentioned here in order to show that once again an "open town not situated within the range of the operations" has been attacked with bombs by the enemy.

[The obvious retort is that German aircraft have done as much, or worse; but, as a matter of fact, German aircraft have always attacked fortresses or towns occupied by troops, and never, so far as memory serves, an "open" town. In this instance, however, we may equally claim that Freiburg is fair game, as it embraces a military air station, together with personnel and matériel. One may as well make up one's mind now, once and for all, that every town, village, or building is fair game for bombs, for if it is not actually being used for war purposes it may be so at any time, if other shelters be destroyed.—Ed.]

RUSSIA.

It was reported from Petrograd on Friday last that a German aeroplane was brought down near Stary Sandec, Galicia, and the two occupants, both of them officers, were made prisoners. Another German aeroplane has been brought down and captured at Plock.

It is reported from Petrograd on December 10th that German aeroplanes were being brought down almost daily at Lodz. Two were shot on Tuesday, December 8th, one by riflemen, the other by artillerymen. This excellent practice is said to be rendering German aerial reconnaissances difficult. Nevertheless, the Germans occupied Lodz.

It was reported from Sevastopol on December 9th that on that morning the German cruiser "Breslau" appeared and fired on some transports, but without causing any damage. Russian seaplanes approached the hostile cruiser and dropped several bombs, forcing the "Breslau" to withdraw. [One would not be disposed to take very seriously the statement that a cruiser had been defeated by aeroplane bombs, if one did not recollect that the crew are probably Turks, and then one remembers Mr Piercé's story of how the "Hamidieh" was defeated by a Servian mule-gun.—Ed.]

The "Messenger de l'Armée" (Petrograd, December 11th) states that the Russians, on the 8th inst., brought down two German aeroplanes which were making reconnaissances above their positions.

The Petrograd correspondent of the "Morning Post" reports:—The fighting now reported daily is rather in the nature of reconnaissances. The Germans are now utilising cavalry with considerably more freedom than hitherto, but their aeroplane work has been curtailed owing to the Russians having now learnt the art of bringing them down when flying at any altitudes that are useful for the purposes of spying. Both the Russian artillery and picked shots with rifles are now able to cope with aeroplanes with tolerable certainty. Rarely a day passes but one of these man-birds is knocked over, and occasionally the bag reaches two or more. I believe the Russian success with artillery against aeroplanes is due to a novel application of old forms of missiles long discarded in ordinary

warfare. During the early period of the war the artillery fired shrapnel at aeroplanes, but with comparatively little success. Some form of case shot or grape is apparently the missile which the ready adaptability to new circumstances—so marked in the case of the Russians, so lacking in the Germans—has applied with success to the novel problem presented by aeroplanes in modern warfare. [Perhaps some form of "chain shot" would be even better.—Ed.]

BELGIUM.

The "Nieuwe Courant," of Der Haag, reports that a man who escaped from Antwerp says that on Saturday, December 5th, a French aviator dropped bombs on the bridge of boats which has given the Germans so much trouble to construct across the Scheldt. The bridge had several times been wrecked by the tide, and it has now been put out of action for at least a week. The same man described how another aviator cheered up the population. He dropped leaflets, telling the people to look out for the Allies on December 16th or 17th. Then, when the Germans opened fire on him, he looped the loop several times over the Scheldt. The townspeople enjoyed the chagrin of the Germans, who, after thinking they had hit the aeroplane, found the aviator was making fun of them.

[A lady who returned from Antwerp last week was there on the second occasion mentioned and told a friend of the writer's that while the aviator was being fired at from the top of the cathedral the townspeople stood in the street singing the "Brabanconne" and cheering the aviator.—Ed.]

A telegram from Sluis to the "Telegraaf" of Amsterdam states that the spy who was shot on Friday, December 4th, in Bruges was a Frenchman, and not an Englishman. He was arrested after returning from England. Several forbidden newspapers were found on him, and also a letter indicating the altered positions of petrol depots which have recently been the target of aviators.

Mr. G. F. Steward, of the "News," reported from Rotterdam on December 8th:—"On Sunday afternoon French aeroplanes successfully attacked a store of petroleum and ammunition at Feluy, a little place near Nivelles. One bomb fell on the ammunition, and three wagonsful exploded."

[It must be remembered, however, that this news can only have reached Holland as a rumour.—Ed.]

A letter has been received from the wife of a leading citizen of Ghent, now one of the hostages for the town. It was sent about a fortnight ago and contains the following passages:—

"... We are having a sad time. As we read in the only Dutch newspaper allowed here, the 'Nieuwe Rotterdamsche Courant,' the Germans are having misfortunes in Russia, and so they grow more disagreeable and exacting here. You will have seen in your papers that the Allies' aeroplanes have dropped bombs here... but as they are obliged to fly very high it is difficult to hit the point chosen and, of course, nothing came of it but the wounding of a few Belgian workmen (now dead, happily). The immediate result is that — has again been taken as a hostage, with nine more of the principal citizens."

[Which shows that bomb-dropping on towns belonging to our Allies, but temporarily occupied by Germans, is by no means advisable unless the act is committed with a definite military object in view.—Ed.]

The "Nieuws van den Dag" learns that on Thursday afternoon a Zeppelin airship was seen over Turnhout, going in the direction of Antwerp.

It was reported via Amsterdam on December 10th from Sittard, in the province of Limburg, that the previous evening, at 6.30, two aeroplanes, coming from a southerly direction, flew over Sittard, and then proceeded eastwards to Germany in the direction of Dusseldorf. Searchlights were working at short intervals. [This is a very improbable story. It would be pitch-dark long before 6.30 p.m., and aeroplanes would certainly not use searchlights.—Ed.]

HOLLAND.

A British aeroplane came down near Breskens, opposite Flushing, on the other side of the Scheldt, about 3 p.m. on December 14th. The pilot carried bombs. He was interned.

MONTENEGRO.

It was reported from Cetinje on December 9th that two Austrian hydro-aeroplanes flew over Antivari the previous night

and threw several bombs at a French transport, but the attempt failed. On the same day an Austrian aeroplane flew along the front of the Montenegrin army on the frontier of Bosnia and dropped leaflets boasting of Austrian successes over the Servians and depicting the situation of the Allies as desperate. The leaflets also announced that the British fleet had everywhere been beaten by the Germans, and that London was being bombarded daily by Zeppelins. The same aeroplane threw two bombs on Niksitch and two on Cetinje, without doing damage.

[The story is Reuter's and may only be intended to give Montenegro a place in the limelight, for all the stories are merely duplicates of what has occurred elsewhere.—Ed.]

SERBIA.

It was reported from Venice on December 12th that the Austrians, having learnt that provisions and ammunition for the Serbs were to arrive at Antivari, endeavoured to destroy them by an aeroplane raid. This entirely failed. The aeroplanes made off towards Mount Lovcen, where the Montenegrins were able to bring down one of them.

ITALY.

The new dirigible, built purely for speed at Rome and known as "V" (Velocity), took the air on December 2nd at Bracciano. As the others, this vessel is a semi-rigid, and has a cubic capacity of 45,000 cubic feet. Her total length is 300 feet, and her greatest diameter—measured vertically—is 90 feet. She is expected to do 65 miles an hour.

With this end in view, important structural strengthening of the nose has been made in the frame design, which is generally on the lines of the M. series, except that to reduce resistance the car has been brought up nearer still to the envelope and is totally enclosed. It appears almost inside the envelope. Four motors transmit 700 h.p. to two 4-bladed propellers of variable pitch and reversible, and about 14 ft. in diameter. Again, as in the other army airships, the car, or "nacelle," is practically a boat. In this instance it consists of a metal shell covered with a wooden skin. Captain Verduzio is credited with having designed "V," the latest of Italy's efforts to resolve the thorny problem of combining speed, strength, and capacity to stay at a high altitude in her airships. He sets 6,000 feet as the height at which the new vessel should be able to navigate comfortably for 15 hours. Patent valve arrangements, not yet made public, are employed to meet expansion and contraction difficulties.

It is stated officially that there is just about 50 per cent. difference between the fastest and the slowest flying speed of the new parasol 100-h.p. Caproni.

The Macchi Parasol-Nieuport, with an 80 L.U.C.T., and piloted by Maggiora, took up two passengers to 2,700 metres (8,800 ft.) at Turin a few days back. I had heard very well of this machine a few days before.—T. S. HARVEY.

SWITZERLAND.

It is stated that the Swiss authorities have stationed troops equipped with machine-guns along the Upper Rhine "to prevent the encroachment on Swiss territory by aviators attempting to cross the South German frontier." Which is very nice, only it cuts both ways. Also, a Swiss soldier with French sympathies might fire at a German trespasser and let a British or French machine go.

DENMARK.

The "Telegraph's" "own correspondent" at Copenhagen reported on December 9th as follows:—"Mines have been washed ashore at Fanoe from a German seaplane wrecked outside Nordby. Danish officers have now saved the seaplane and seized it. They state that, although it has been ten days in the water, the motor is only slightly damaged."

[This is even funnier than the same paper's "own correspondent" at Boulogne. A seaplane which is also a minelayer would indeed be an achievement. Unfortunately, a mine of any consequence weighs somewhat more than an aeroplane, so the story seems improbable. The implied surprise that ten days' waves had not knocked the engine to pieces is also comic. Apparently the "Telegraph" needs at least two new "own correspondents" and possibly a new sub-editor.—Ed.]

ROUMANIA.

It is now reported that Prince Bibesco, of the Roumanian Air Department at Bucharest, together with the Head of the Technical Department of the War Office, have been despatched

on a mission from Bucharest to Italy. The last-named officer has also been to Vienna and Berlin in connection with stores, etc., which were ordered by Roumania from Germany and Austria before the war, and which have so far not been delivered. Prince Bibesco will be remembered as a Blériot pilot, and there was keen competition between him and the Bristol Co. as to whether the Roumanian aeronautical service should be equipped with a majority of Blériots or of Bristols.

AUSTRALIA

The work of the Australian Flying Corps is now progressing quite rapidly. A number of pupils are in training under the instruction of Captain Henry Petre, who has just been promoted from lieutenant with acting rank as captain, and Lieutenant Eric Harrison. The photograph which is published in this issue shows the camp of the first Australian contingent to leave for the war. The camp was located at Broad Meadows, on the Werribee Plain, about ten miles from Melbourne, and was at the time occupied by the Victorian portion of the Australian Expeditionary Force. The photograph was taken by the Director of Military Operations from a Bristol-built B.E. biplane piloted by Captain Petre.

The "Gobbi" Patent Lifebelt.

Primarily designed for pilots of waterplanes this lifebelt consists of a tubular girdle resembling a "detachable" pneumatic airtube as used in the tyres of certain motor vehicles. Inside it at one end are fixed two receptacles containing respectively water and any chemical substance which develops gas when damped by contact with water, such as carbide of calcium. This contact is effected either by the wearer opening a tap set in a pipe which connects the two receptacles, or automatically by the capillary action of wicks which suck up moisture directly from the liquid in which the belt is immersed. The patent covers principally the means by which these initial operations and the consequent inflation of the lifebelt are surely and rapidly brought about. To this end the waterbag is made of rubber, but the carbide container is of metal, and both are in the shape of pocket cigarette cases, and placed so as to lie up against the wearer's chest.

When charged for use the belt is simply buckled on, the tap opened and the tightness of the belt may be relied upon to send the water along to the carbide. This almost instantly gets into action and inflates the lifebelt, after which "no ills can harm." N.B.—The flat part of the belt is on the chest, hence swimming is easy.

When the Gobbi belt is intended to act automatically certain

modifications are made in its design. The tap is dispensed with, and there is fitted a small auxiliary generator with the above-mentioned wicks passing through its walls. On immersion a little water instantly percolates into this small generator via the wicks. Gas is thus generated and sets up a lively pressure against the walls of the adjacent—main—water-container, so forcing water through an automatic rubber valve into the main generator and causing full inflation of the lifebelt. To provide against immoderate dosing of carbide Dr. Gobbi has recently added a safety valve connecting with a sack-like appendage into which excess of gas passes, and is, so to speak, stored against any possibility of loss of pressure through long exposure or "punctures," which might occur in a wreck.

Three layers of gasproof and waterproof material are used in the construction of the "envelope," and the inventor has aimed at a guaranteed life-saver.—T. S. HARVEY.

The R.Ac.C. and the Air Services Fund.

A proposal, which is entirely praiseworthy, is on foot to raise a really considerable sum of money, to be invested so that pensions may be paid to the dependents of those men of the Royal Naval Air Service and the Royal Flying Corps who may die on active service. To be of any use at all, such a fund must be an absolute success, and it is therefore advisable that it should be given the official support of the Royal Aero Club. The matter has been before the Committee, but opinion seems to be divided as to the actual amount of support the Club should itself give the Fund. In consequence, an extraordinary General Meeting has been called as follows:—

Notice is hereby given that a Special General Meeting of the Club has been convened by direction of the Committee pursuant to Rule 30, and such Meeting will be held at 166, Piccadilly, London, W., on Monday, the 21st Dec., 1914, at 5 p.m.

AGENDA.

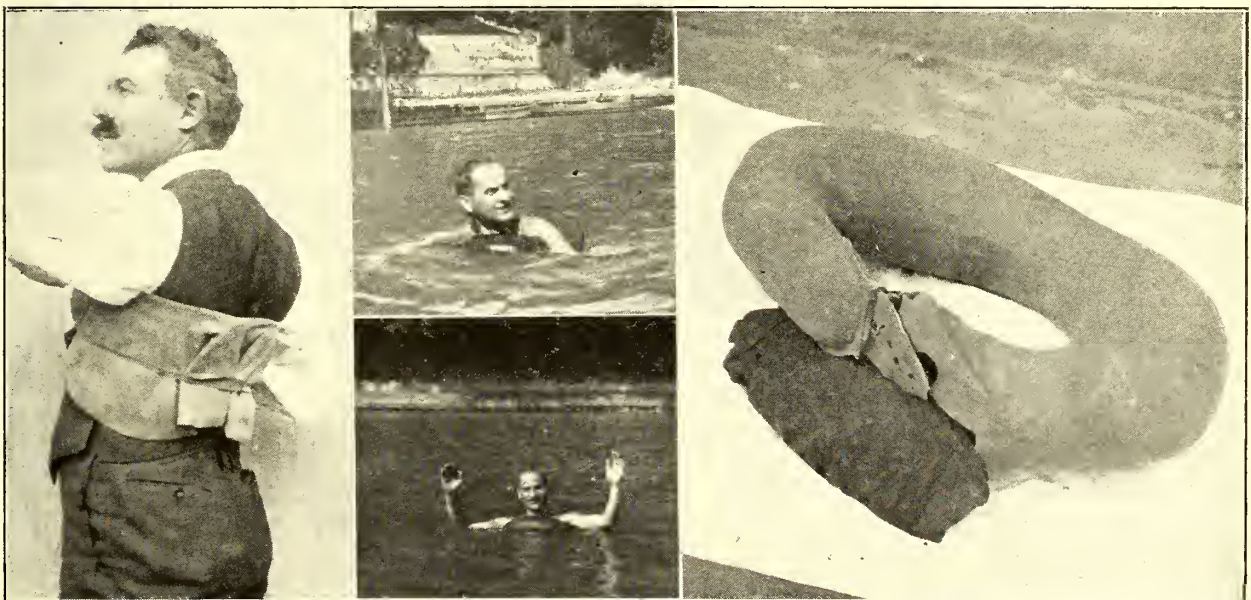
To inquire into the advisability of, and if approved to authorise, the Club subscribing the sum of £1,000 to the Fund for the benefit of the Air Services.

The following is a copy of the resolution of the Committee convening the Meeting:—

"That a Special General Meeting of the Members of the Club be called to inquire into the advisability of, and if approved to authorise, the Club subscribing the sum of £1,000 to the Fund for the benefit of the Air Services.

"The majority of the Committee are of opinion that this sum should be given.

"The majority of the Finance Committee are of opinion that



The Gobbi Life-Saving Belt, in and out of action. On the right it is shown inflated. The gentleman in the middle, despite his likeness to Julius Cæsar, is merely demonstrating its efficiency.

the financial position of the Club does not justify any contribution.

"By Order of the Committee, B. STEVENSON, Assist. Sec."

Members of the Royal Aero Club, and any friends to whom they may have imparted the news, will no doubt have read with regret in this official notice, of the apparently unsatisfactory position of the club's finances, and it is to be hoped that the confession of deplorable poverty expressed by the majority of the Finance Committee will not cause a run of the creditors on the secretarial department. The confession comes as a considerable surprise, in view of the balance-sheet of the Club placed before the members in March last, when a balance of over £3,400 to the credit of the club was shown. Perhaps, therefore, the majority of the Finance Committee are unduly pessimistic, and the club is not really on the verge of financial dissolution. Its credit may even yet be good enough to raise the £1,000 which is required in order to give this very practical support to aviation—the combined sport and science which the club is supposed to encourage.

Although nothing has been said publicly, it is known to many members that the Air Services Fund is not, as might be imagined from the official notice, the result of a happy brain-wave on the part of the Committee of the club, but is due to the inception and generosity of Messrs. André and Edouard Michelin, who, when suggesting the fund and obtaining the approval of the Admiralty and the War Office, offered to subscribe £1,000.

It is also no breach of confidence to add that certain of the most practical and most active members of the Committee, who believe it to be vital to the welfare of the club that the fund should be run energetically, have offered to subscribe among themselves a further thirteen hundred pounds or so, should the club at its meeting on Monday next decide to act as a society of encouragement, instead of as a savings bank.

In times like these, we must not hoard our gold, and if the Royal Aero Club does not recognise its responsibilities sufficiently to run Messrs. Michelin's excellent suggestion for the club is worth, it should confess it has become too out of date to represent National Aviation, and it should then return the money to Messrs. Michelin. If, as one hopes, the active members of the club decide to give the £1,000 required, it means that the Fund will start from the comfortable basis of £3,300, or thereabouts, an amount which will entitle it to be treated with respect by future subscribers. It is, therefore, urgently requested that all members who can possibly attend the meeting on Monday next will do so.

Southampton District.

The weather has again made flying almost impossible during the past week; the flights between showers have been short. On Thursday morning, Mr. Mahl brought out a Sopwith-Sunbeam tractor for test and made a good flight. The same machine was out on Saturday and made a splendid flight, its speed being very noticeable, the Sunbeam evidently doing its work well. A small Sopwith-Gnome tractor left Woolston late on Friday at an amazing speed, and made a good flight.

In re An Engine.

In the King's Bench Division on Tuesday, December 8th, before Mr. Justice Ridley, an action was brought by James Walton, of Portman Square, a late director of the Walton Edwards Aeroplane Co., against Handley Page, Ltd., aeroplane makers, of Cricklewood, for breach of contract. There was also a counter-claim for work done. Mr. Douglas Hogg and Mr. J. B. Melville appeared for the plaintiff, and Mr. Bromley Eames and Mr. C. T. Le Quesne for the defendants. The action referred to a claim of £550 made by the plaintiff in respect of a 100-h.p. Clerget aeroplane motor supplied by him to be built into a biplane constructed by the defendants. Each was to participate equally if the machine were sold.

The counterclaim was for £13 for repairs to the said engine, and £60 for altering the biplane. Messrs. Handley Page, Geo. A. Burls, A.M.I.C.E., and Geo. W. Beatty deposed as to the inefficiency of the engine.

The Judge, in summing up, said that no arrangement had been made as to any price to be paid for the engine unless the biplane was sold. There was not sufficient evidence against

the defendants to prove that they did not endeavour to dispose of the engine. Judgment was given for the defendants on the claim, and judgment for the plaintiff on the counter-claim, each to pay their own costs.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
South Coast...	Windy	Windy	Windy	Fine	Windy	Windy	Wind & Wet
Hendon ...	Gale & Rain	Gale & Rain	Windy	Gale & Rain	Fair	Fair	Gale & Rain
East Coast ...	Wind Rain	Wind	Wind Rain	Wind Rain	Fine to Wet	Show's	Gale

Eastbourne.—AT THE E.A.C. SCHOOL.—Instructors: Messrs. F. B. Fowler and R. C. Hardstaff. Pupils with instr.: Flt. Sub-Lieuts. Barnes, Pullin, Travers, Teesdale, Openshaw, Wood, Brisley, Sibley, Gerrard, and Bailey. Machines: E.A.C. biplanes.

Hendon.—AT THE GRAHAME-WHITE SCHOOL.—Instructors: Messrs. Manton, Shepherd and Russell. Pupils with instr.: Prob. Flt. Sub-Lieuts. Dalison, Mills, Dallison and Walmesley (new pupil). Strts. alone: Prob. Flt. Sub-Lieuts. Breese, Livoock, Watson, Barnes, Mills, Walmesley and Mr. Greenwood. 8's or circs.: Prob. Flt. Sub-Lieut. Watson, Wakeley, Price, Young, Breese, Ffield, Barnes, Cooper and Watson; Mr. Greenwood half circuits. Certificates taken by Prob. Flt. Sub-Lieuts. Price and Ffield.

AT THE BEATTY SCHOOL.—Instructors: Messrs. Geo. W. Beatty, W. Roche-Kelly, and E. Baumann. Pupils (with instructor): Messrs. Virgilio (25 mins.), Gardner (17), Leeston-Smith (24), Anstey Chave (22), Cornish (30), Merton (10), Donald (20), Perrot (8), Roche (10), de Meza (10), Lieut. Bantertyne (8). Machines in use: 40-h.p. Wright biplane and 50-h.p. Gnome biplane ("dual" control).

AT THE LONDON AND PROVINCIAL AVIATION Co.'s SCHOOL.—Instructors: Messrs. Warren and Smiles. Strts. or rolls alone: Messrs. Derwin, Moore, Abel, and Laidler. 8's and circs.: Mr. Barfield, took certificate. Machines: L. & P. biplanes.

AT HALL SCHOOL.—Instructor: Mr. J. Rose. Pupils doing strts.: Mr. E. W. Connochie (16), Mr. A. Davy (8), Mr. Lloyd Williams (18), Mr. Arthur Waterson (4). Machines: Hall tractor biplanes.

Shoreham.—AT THE PASHLEY BROS. AND HALE SCHOOL.—Instructors:—Messrs. E. and C. Pashley and B. F. Hale. Pupils with instr.: Messrs. A. Goodwin, G. Charley, J. Morrison, and J. Sibley. 8's and circs.: Messrs. C. Winchester, T. Cole, J. Woodhouse, and Menelas Babiotis.

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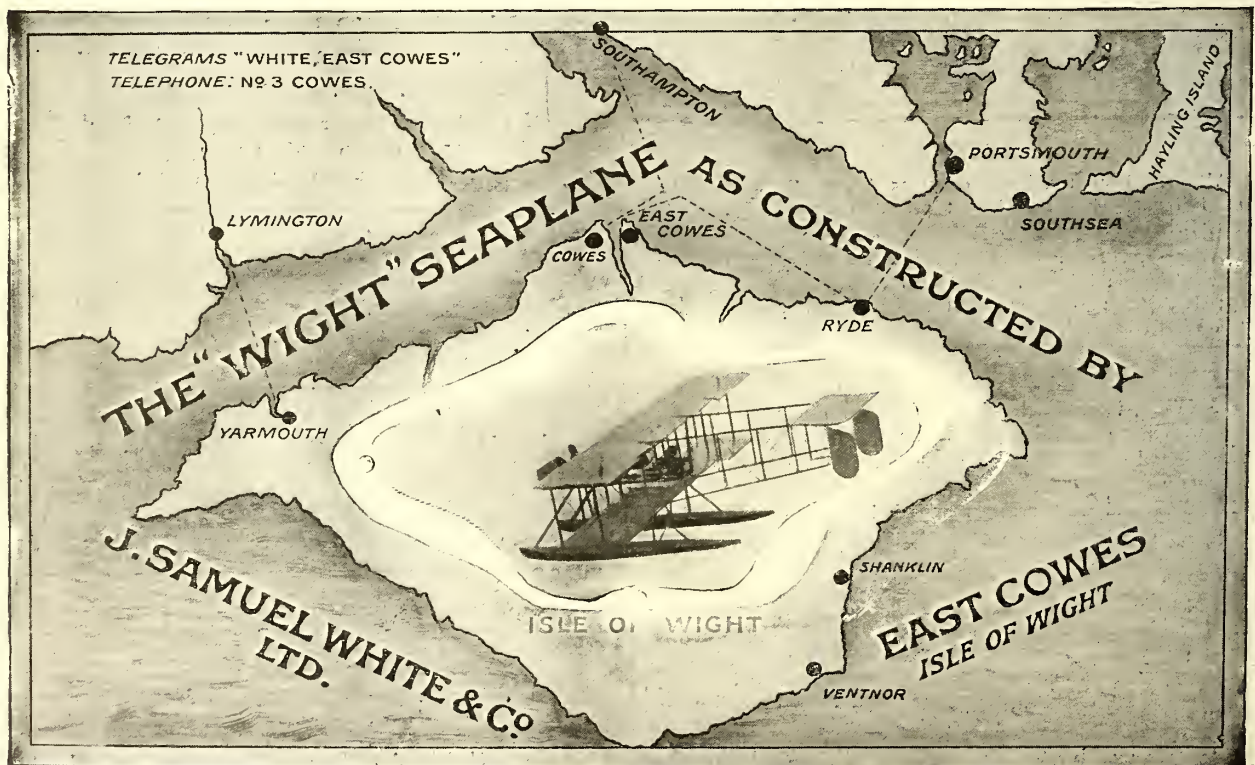
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12
WEEKLY

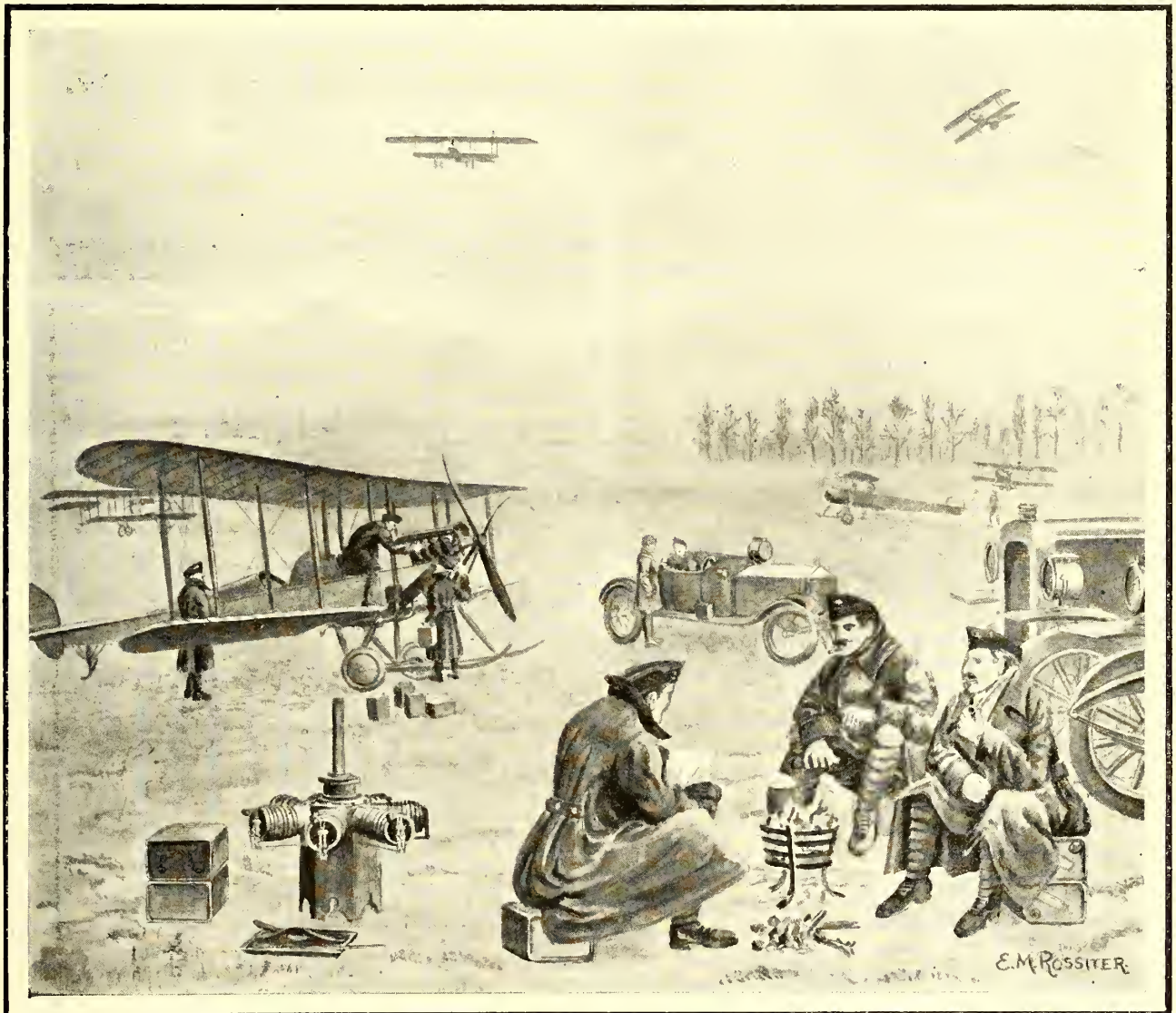
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.
AS A NEWSPAPER.]

WEDNESDAY, DECEMBER 23, 1914.

No. 26

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Some Practical Points for Consideration.

These notes will, in the ordinary course of events, be in the hands, or rather before the eyes, of their readers during the few days of holidays which the busy people of the aeronautical industry are likely to take at Christmas. Probably most people in the trade will cease work on Christmas Day, Boxing Day, and the following day, which is a Sunday, so, on the principle of the 'busman's holiday, they may like to consider a few practical points connected with aeroplanes. Perhaps when they return to work it may be possible for some of the points to be investigated, with ultimately good results.

A Question of Propellers.

It may, I think, be fairly taken for granted that less is known about propellers than about anything else connected with aeroplanes—which means that very little indeed is known about these necessary and troublesome fittings. Some years ago, one of the early constructors at Brooklands, who is now on active service, and who has a positive genius for common sense, remarked that if one took a chunk of timber and hewed it out roughly into two blades each with somewhere about the same angle to the propeller shaft, and if the actual effective pitch of the implement happened to suit the particular aeroplane and engine to which it was fitted, the result was within about five per cent. of the most scientifically accurate propeller human knowledge could then produce.

He was very nearly right then, and he is not very far wide of the mark now, chiefly because, although the science of propeller design in itself may have made great progress, no designer seems to have reached the stage of designing a propeller to fit the varying conditions under which it has to work on different aeroplanes. Given the actual brake-horse-power of the engine at so many revolutions per minute, and given the speed at which the aeroplane to which it is fitted is supposed to fly, it seems to the scientific designer quite a simple matter to design a propeller which will absorb the horse-power at that speed. But, actually his troubles are only beginning. A tractor biplane which flies at a certain speed with a certain engine will need a screw of quite a different design from a pusher of the same speed with the same engine, and both will probably need one different from machines of similar type, but with different cowls, or body-work.

When Mr. Glenn Curtiss won the Gordon-Bennett Race in 1909 he used a propeller which simply consisted of two flat blades, without a suspicion of helical twist or blade camber. The cleverest propeller designer in France built a couple of propellers specially designed for this machine, on the most scientific principles then known, and when they were tried the machine was about five miles an hour slower with either of them than it was with its old flat blades.

A week ago a new and very fine scout was tried with several propellers, each specially designed for it by a very successful designer, and it flew at about 81 miles an hour, though its maker knew it should do nearer 90. Then another propeller designed for an absolutely different type of machine, which has a speed of 83 miles an hour, was put on it, and it promptly proceeded to fly at

over 87 miles an hour, without increasing the engine revolutions, which shows that the effective pitch of the same propeller was different on the two machines. From this it does not appear that propeller designing has progressed very far in the past five years.

Some Quaint Instances.

Some other instances of the quaint behaviour of propellers are worth quoting. Most people know the curious four-bladed propeller—or rather tractor-screw—designed as the result of voluminous experiments at the National Physical Laboratory, and fitted as the standard air-screw on all the B.E.s. It has a blade which is fairly broad in the middle and tapers to a very small and thin tip—so thin that it can be bent backwards and forwards a couple of inches with one finger. Of course, the diameter, pitch, blade-area, camber and all are most carefully calculated to fit the 70-h.p. Renault with which it is used.

When the Expeditionary Force went to France, and the R.F.C. flew to Amiens, which was then the base, one officer came down not far from Abbeville and broke one blade of his propeller. A French aeroplane maker, who has works not far away, happened to be passing and saw the trouble. He thereupon sent out a couple of men, who, seeing that no standard propeller would fit the machine, hewed off the broken blade and the one opposite to it, cleaned up the boss of the propeller neatly, and asked the officer to try how the machine flew with only two blades. Much to his surprise, she flew quite nicely, though naturally the engine had a tendency to turn over at more than its normal speed, as it had less wood to push round. Yet the effect of the remaining half of the propeller was very much more than half that of the whole propeller, which suggests that the propeller as a whole must be very inefficient, at any rate on an aeroplane, whatever it may be on a test bench, which again suggests that the same machine with the same engine might do better with a two-bladed propeller.

One assumes that the four-blader has a steadier flywheel effect, and so is better for the Renault engine, in which the propeller-shaft is also the camshaft and so is driven by gears from the main shaft at half the engine speed. Naturally a long two-bladed propeller the least trifle out of balance would slog the gears to pieces in a short time. Still, it should be easy to get over that, if it were definitely proved that the four-blader really wastes power as many people think it does—and, anyhow, it is a desperately expensive propeller to make. This is one of the little problems worth considering, though, of course, the Maurice Farman's with the same engine use two-bladers with uniform success.

An Obvious Error.

Though comparatively few of them were ever made, most people connected with aviation know the B.E.8. For the benefit of those who do not know it, one may describe it simply as a staggered biplane with an 80-h.p. Gnome engine, and a very bull-nosed cowl. When these were first turned out they were fitted with four-blade tractors of the usual R.A.F. type, but specially designed for the calculated speed of the machine and for the known power of the engine.

Quite a large number of these propellers were made, but one gathers that they all had to be scrapped, because the machines would barely stagger off the ground when fully loaded, and flew very badly with a light load. This seems quite natural when one remembers that the broadest part of the blade, which presumably does the most work, was working inside a circle of about the same diameter as the flat face of the engine cowl, and was simply pushing air up against the cowl and squeezing it round the sides. The actual flying of the machine apparently had to be done with the narrow springy tips which projected beyond the cowl. Which shows the evil of designing propellers on pure theory without considering all the conditions under which they have to work.

Eventually these machines were made to fly just passably well by fitting them with Avro propellers, which are of large diameter, with rather narrow blades, but with the full area of the blade continued almost to the tips, and are designed for a different class of machine of very much higher speed. The Avro machine does well over 80 miles an hour, whereas the B.E.8 never reached anything over 63 m.p.h. Possibly the blades were "doctored" a bit to get the necessary revolutions out of the engine, but there was no special desigining done for the job.

One would have thought that the necessity for having the working part of the blades clear of obstructions would be obvious, but apparently it was not.

Incidentally, other curious things were afterwards discovered in those machines, one of the most interesting being the fact that owing to someone forgetting to calculate some strain caused by the stagger of the planes—which were warping planes and not aileron planes, and so had no fore and aft vertical bracing—the inner interplane struts had a factor of safety of about nought. Which is not without a certain grim humour when one considers how many really excellent machines of types which have never broken in the air, have been condemned, at vast expense to the nation and to their makers, because scientific calculations showed that they had an insufficient factor of safety. It is this kind of thing which makes so many people trust to the eye of a successful constructor rather than to the calculations of the most bellettered of scientists.

Ground Clearance.

One of the little troubles which beset those who wish to design a very fast aeroplane is the difficulty of making a propeller which will absorb the power of a big engine efficiently and yet will not be of such enormous diameter as to force one to mount the machine on a chassis which looks like a set of stilts. Not long ago a certain pusher biplane, designed to carry a gun and to fly fast, and therefore fitted with high power, was up against this problem.

A propeller of ordinary orthodox design fit for this engine was so long that it only cleared the ground by a few inches, and so it would have been obviously unsafe to have tried to start off anything but a perfect surface, because of the danger of collecting rocks, or clods of earth, or long grass with the propeller tip, and probably wrecking the whole machine. Therefore, one of the firm's designers developed a theory of his own, and eventually produced a special propeller about the shape of a navy's shovel, with a short enormously fat blade, which gave heaps of clearance from the ground. One gathers that it flew the machine quite well at the first attempt, though whether it has developed any fresh snags of its own has not yet been reported here.

A screw of this sort, if successful, would be a real benefit to humanity, for every inch of extra length in the chassis struts and wiring means sacrificing miles an hour in a really fast machine.

Quite recently a terrifically fast scout was turned out by one successful firm, and, in order to get more speed, the chassis was cut so short that the propeller-

tips almost touched the ground. It did not matter in starting, because the power was so big that the machine jumped straight off the ground without any need for a run with the tail up, but landing would have been almost impossible to any but a very experienced pilot who was clever enough to get his tail-skid onto the ground first and keep it there. If he had landed with the tail the least bit above the horizontal the propeller tips would have caught anything on the ground bigger than a match-box.

Elevated Propellers.

It is precisely on this question of propeller clearance that the gear-driving engines have an advantage. A mere matter of six inches between the centre of the crank-shaft and the driving-shaft means that a propeller a foot longer can be used without lengthening the chassis struts.

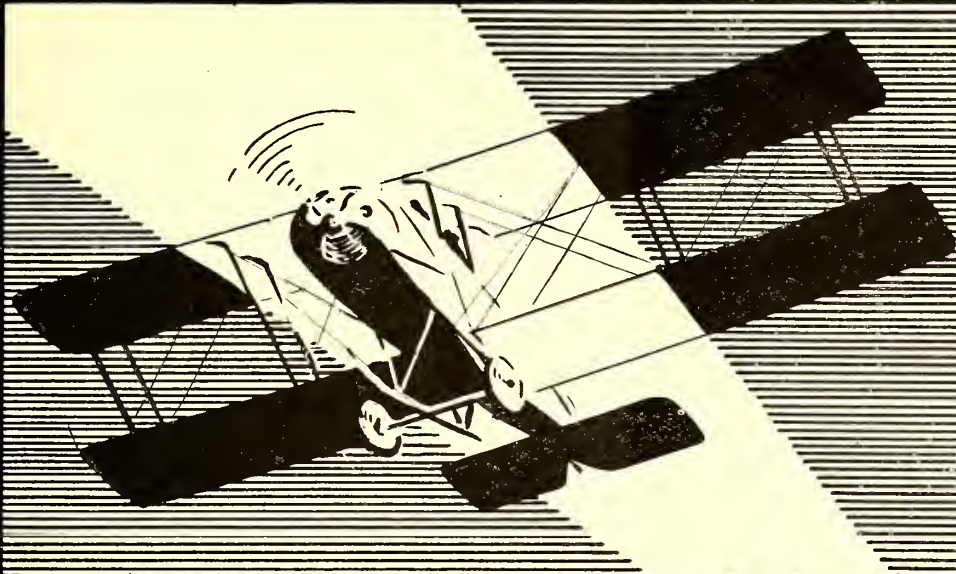
A machine like the Wright with two chain-drive propellers, or like the Eastbourne Aviation Co.'s tractor with two screws driven by shafts, in which the propeller centres are right up between the planes, has a bigger advantage still, for in the one case the chassis is only a foot or so high and in the other the screws are well up out of the way of the water thrown up by the floats. In such cases, however, one has to balance up the head resistance of the chains and their stays, or the driving shaft cases, against the reduction in the height of the chassis.

When one comes to the really big aeroplane one can perhaps better afford the resistance of the shaft-casings, which, of course, would be carefully streamlined. About a year ago Mr. Gordon England showed me a scheme for a huge biplane which practically landed on the belly of the fuselage. It had a "breast-bone" something like the last Flanders biplane, and that acted as a skid. The wheels tucked up inside the fuselage when the machine was flying, and so there was no chassis resistance at all. The shaft cases worked in as useful cross-ties, and so partially paid for their passage. The machine had various other novel points, all the result of Mr. England's extensive experience and all very practical, so one hopes that when the day of the really big aeroplane does arrive his ideas will be given a trial, for he is essentially a practical man.

Even on quite small machines it would be a distinct advantage to get rid of the chassis altogether, for like the floats on a seaplane, it serves no useful purpose when in the air, and the better the designer the more he tries to get rid of non-essentials. This idea is well illustrated in the old engineering saying that when a French engineer wants to improve a locomotive he puts something onto it, but when an English engineer wants to improve one he takes something off it. The less like a Christmas-tree any mechanical vehicle looks, the more efficient it is likely to be. The more "eyeable" a machine is, and the cleaner its general design, the better.

Is Aspect Ratio Over-rated?

To return to the short, fat propeller. It occurs to one that all our old beliefs about "aspect ratio" may be quite wrong. In the early days of aviation we were taught that it was the length of the entering edge of a plane from tip to tip which mattered more than anything else, and the shorter the surface from front to back behind it, the better. Then Mr. Horatio Phillips, whose experiments dated back to a time long before anyone flew, came along with a doctrine about the proper shape for the leading edge, and then we all talked learnedly about the "Phillips entry," which, incidentally, is still used to a great extent. Then people began to discover things about "camber" and "trailing edges," and little matters of that sort, and "aspect ratio" became less considered. And then one began to find, somewhat to one's annoyance, that machines with an aspect ratio of about five to one flew as well as those with an aspect ratio of ten to one, which hardly seemed right.



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W

Lately we have had an epidemic of small fast biplanes of the kind popularly—and officially—known as “tabloids”; queer little things with a span of about twenty feet and a chord of five, so that—allowing for the fact that the inselage, the chassis, and the up-current from the cowl practically cuts the wings into four separate planes—they really have an aspect ratio of less than two to one. This makes one wonder very much whether aspect ratio really matters at all, and whether there is the slightest relation between chord and span. This is another of the questions worth considering by those who study design scientifically.

Camber, Chord, and Span.

Is it possible that the chord is simply a function of the camber? Or is there a limiting length of chord beyond which one must not go, no matter how great the camber or span? Or is the height of the maximum camber, which presumably limits the chord, itself limited in some way by the span? If not, why should one not make a machine (say a biplane) with a span of about forty feet and a maximum camber of two feet or more, and a chord of fifteen or twenty feet? And if one did, would it lift badly or well in proportion to its 1,600 square feet of surface?

There used to be a legend at Brooklands that Mr. A. V. Roe designed his wings by drawing a curve, which looked to him pleasing for its purpose, then he used to place across and near the front of it, wherever seemed good to him in the light of his own intelligence, a section of a main spar of such size as also

seemed good to him. From the top and bottom surfaces of the spar he used to draw what appeared to him to be the best possible streamline, using the original curve as his centre line. The back spar had to be worked in somehow by the light of common sense, for it had to be big enough to stand up, and small enough not to interfere with the streamline.

I may be libelling Mr. Roe by attributing to him such very primitive methods, but in any case the result of his peculiar combination of inspiration, experience and common sense has always been a good bit ahead of the leading scientists of the day so far as the performance of the finished product is concerned, and I think I am right in saying that Mr. Roe's only real failures have occurred when he has trusted hired figure-shifters and “x” chasers to alter one of his inspired designs so as to comply with official requirements. Naturally one excepts absolute experiments such as the small biplane with swept-back wings, which appeared at Olympia early this year, though even that flew better than most of the experimental machines designed on purely scientific lines.

Anyhow, Mr. Roe's machines, and later on the machines designed purely by eye by Mr. Sopwith and his chief engineer Mr. Sigrist, between them beat in their performances anything the world had produced up to that time, which seems to indicate that “eye-ability” has something to do with efficiency—provided, of course, that the owner of the deciding eye does not happen to be a futurist.

(To be continued.)

“Am Tag.”

By W. L. WADE.

The day broke on a bright and bitterly cold Christmas morning. The weary outposts in the advanced trenches stretched their limbs and peered cautiously over the ice-bound sill of their earthworks, wondering whether the day would bring to them a banquet of shell or the long-talked-of Christmas feast. Nothing of the enemy could be seen but here and there a pencil of smoke from a replenished fire. Across the wind-swept plain was borne a murmur of “Ein feste Burg ist unser Gott,” chanted in the Boche lines.

Well to the rear, in the camp of the detachment of the Flying Corps attached to the Right Wing, little groups of officers and men stood about, passing the compliments of the season, and endeavouring to stamp a sufficiency of warmth into their half-frozen bodies.

Eleven o'clock—the Sabbath-like calm was unbroken. The enemy had not fired a single gun, and by tacit consent the British brigadier had preserved an armed neutrality. A number of officers were working around a camp table, smoking and laughing, as they carefully tied up one bulky package after another. Presently, one Compton Routledge, flying officer, R.F.C., walked over to the C.O.'s hut, reciprocated his chief's greetings, and asked permission to carry out a scheme contrived by the rest. A ready assent was given, and the young officer rejoined his friends. After consulting a map he ordered his machine out, and as soon as the mechanics had removed the ice-tiffened tarpaulin it was loaded up with the mysterious packages.

The tanks were filled up, Routledge clambered into his seat, and after a little encouragement with a brazing lamp the engine was got going. He flew a couple of miles to the rear and headed off for the north-east, in the direction of C—, where the headquarters of the Naval Air Service were stationed. The air was exhilarating, and the sun loomed through the grey sky like a huge red ball, and Routledge found himself singing carols under the shelter of the wind-shield.

Presently, however, the sun faded away, the sky grew dark, and a choppy side wind sent the machine yawing off her course. The pilot promptly headed her east by north, and started climbing steadily. Before, however, the aneroid indicated the 5,000 ft. level, flakes of snow began to race along the engine cowl like dazzling white lines, and the ground slowly faded from view. Crouching down in the cockpit, and steering by compass, aneroid, and clinometer alone, Routledge got above the snow-

storm at 8,000 feet. He was somewhat doubtful as to his exact position, but he flattered himself he had allowed sufficiently for drift. In fifteen minutes the storm had blown past, and once more he could see mother earth. Checking his motor, he slid landwards, studying his map the while, to try and pick up his position. Now the snow had hidden all but the most prominent landmarks, and by the time he had got down to 3,000 feet he had to acknowledge himself lost.

With a resigned shrug he headed north-east once more, gazing in all directions for a watercourse or railway which would determine his locality. Suddenly, almost immediately beneath him, three flashes spurted from the snow, and a moment afterwards as many shells burst close to the machine. This was not good enough, so, swinging round to the south-west, he commenced climbing as rapidly as possible, getting to work with the pressure-pump at the same time. Another shrapnel burst ahead of him, and another just below the machine. This was not so bad, but worse was to come. He became conscious of little shreds of cloth starting up from the surface of the lower plane; a whole row of them appeared in geometrical progression across the inner cellule, and the machine gave a shiver as a bracing cable was cut through. The deadly machine-gun continued its work, and white splinters leapt from the struts.

The pilot felt a numb pain in his shoulder—a sickly feeling swept over him. With a last effort he pushed over the switch and slid forward onto the wheel. The engine stopped with a remonstrative whistle, the nose of the machine dipped, and the aeroplane dropped like a stone in an uncontrolled spiral. A little group of figures appeared from cover, gesticulating excitedly as they watched their quarry spinning earthwards, its tail flinging a wider circle than its nose, wriggling through the air like a badly balanced dart.

Routledge was dimly conscious of that mad dive, and wondered, without fear, and in a perfectly impersonal manner, how the fatal crash would feel. When the machine was within 70 feet of the ground he collapsed entirely, and slid still farther forwards, and this saved his life. His right foot slipped clean over the rudder-bar, and his weight, falling on his left foot, pulled the rudder violently over in that direction. The check caused the aeroplane to skid violently, but the rudder pushed its nose up somewhat and retarded the fall slightly.

The crash came; the machine turned a cartwheel, buried

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the pilot underneath, and all was still. A crowd of men in grey uniforms surrounded the débris, and, under the direction of a guttural-voiced officer in flying kit, eased up the broken fuselage and tenderly drew the motionless body from beneath it. Several other officers came upon the scene and looked upon their victim in phlegmatic calm. A doctor pronounced life still present and set to work to fight for the life of the fallen enemy.

Meantime, the remains of the aeroplane were carefully searched, and package after package, some of them crushed, were gingerly extracted and arranged upon the ground. A fearless young lieutenant carefully unwound the wrappings from a hemispherical package—it contained an earthenware vessel with a metal cover. Water was called for, the curious machine immersed, and the brave lieutenant cautiously loosened the cover. Nothing alarming happened, so he slowly drew off the lid and disclosed to the excited eyes of his comrades a deadly mixture—Christmas pudding, rich with fruit and brandy! Package after package was gleefully broached, disclosing cigarettes, a turkey, mince pies, various woolly articles, and sundry other external and internal comforts.

"Hoch!" cried an ober-lieutenant; "let us dine at the expense of the enemy!"

The senior officer looked grave—he had picked up a card which lay among the wreckage. "Greetings from the Officers of the Royal Flying Corps on the Right Wing to the Officers of the Royal Naval Air Service at C—." He shook his head. Only ten months ago he had been in England and had been the guest of the Naval Air Service. He had admired the light-hearted, boyish ways of the British aviators—and he realised the glee with which they would have received the offering of their brothers-in-arms. He smiled when he remembered how, in his own boyhood, he had peered up the chimney on Christmas Eve and invoked Saint Nicholas.

"Nein," he grumbled; "we have shot down an enemy, but he was unarmed and a bearer of goodwill; for the honour of our corps the message must be delivered. Who will volunteer? He will probably be taken prisoner—but that must not matter."

The youngest pilot in the squadron, Lieutenant von Schumann, stepped forward and saluted. "I will go, Oberst."

Willing helpers hastened to repack the undamaged goods, and

The R.N.A.S. Comforts Fund.

The contributions for the past week, both in cash and kind, are again most satisfactory. A notable contribution was 150 pairs of socks from her Majesty the Queen. Particular thanks are due to Mrs. Grigg and friends in Torquay, the Hon. Mrs. Morgan (who sent 8 geese to a Northern Air Station), Mrs. Kendal, Lady Peirse, wife of the Naval C-in-C. at Bombay, and Mrs. Groves, who have all sent many garments.

The following further cash contributions have been received: The Anti-Aircraft Section of the R.N.A.S., £50; Dr. Sunderland, £13 6s.; Directors of the General Aviation Contractors, Ltd., £10 10s.; Mr. S. Samuel, M.P., £10 10s.; Messrs. Short Bros. (employees), £10 10s.; Miss Armstrong, £10; The Cédric Lee Co., £1 10s.; Mrs. Churcham, £1 15s.; Messrs. Mann and Grimmer (employees), £1; Miss L. M. Smith, £1; Anon., £1; Mr. I. Baldwin, 10s. 6d.; Mr. C. J. Knight, 10s.; Miss H. Spranger, 8s.; Vickers, Ltd., Erith (woodworkers' second contribution), 6s.; Mr. A. Charles, 5s.; Mrs. Dawtry, 3s.; Mrs. Hensman, 2s. 6d.; Mr. J. A. Currey, 2s. 6d.; J. Samuel White & Co., Ltd. (directors and workers of Aviation Dept.), £34 13s. 11d.; Vickers, Ltd., Erith (Woodworkers' third contribution), 6s.; H. P., 5s. This brings the week's total to £148 18s. 5d., and the grand total to date to £475 12s. 7d.

The Flying Services Fund.

At the Special General Meeting of the Royal Aero Club held on Monday last, the members present, by more than a two to one majority, decided that the Club should give £1,000 to the Flying Services Fund, which is to be founded for the benefit of officers, N.C.Os., and men of the R.N.A.S. and R.F.C.

The exact objects of the Fund have still to be defined. That is to say it is not decided whether the proceeds are to be given as cash grants to the injured or invalided, or whether donations are to be made from the interest on the Fund's capital, or whether—as seems most desirable—the beneficiaries are to be the dependents of the N.C.Os. and men only.

an Albatros biplane was brought from its tent. The cargo was packed into the passenger-seat, a shaking of hands, a grinding of the self-starter magneto, the engine roared out, and the biplane climbed in the direction of C—

Half an hour later the section of the Naval Air Service operating at C— caught sight of an aeroplane bearing the black crosses of Germany on its wings. It headed steadily for their position. Without delay a pom-pom and a maxim were blazing away at it, but the shooting was not first class, and the machine carried on. Suddenly its motor stopped and the pilot dived vertically for the ground. The commander ordered firing to cease—the German had obviously caved in. He flattened out and landed. A little crowd of officers surrounded the machine. The German jumped out with a smile on his face unnatural in a prisoner, and asked for the commanding officer.

"On behalf of my commander, I have come to express the sincere regret of our corps that we should have shot down the Lieutenant Routledge, who flew over us as Christmas messenger from your military flying corps. He is wounded, but he is receiving every care, and I have brought to you their greetings and their presents. I am your prisoner!"

The British Commander bit his lip—it was so terribly irregular. Turning to his officers, he said: "Gentlemen, this gallant German aviator is our guest till sundown." To the aviator he continued: "Sir, I trust you will convey my deepest thanks to your colonel. I esteem his courtesy most highly. I will leave it to him to release Mr. Routledge when he is fit to travel—we will call it an exchange of prisoners." Lieut. von Schumann saluted and was at once carried off by the British officers, who welcomed him cordially to their Christmas feast.

At the end of the meal the commanding officer proposed the toast of "All Aviators." The German stood up to reply. He fingered his glass nervously, then pulled himself together and proposed: "To the day!—when we may be friends!" The toast was drunk in silence, but for a solemn "Amen" which came from no one knew quite where.

As the winter sun sank redly upon that frost-bound plain, an Albatros biplane disappeared into the mist. A knot of officers stood watching it till it was out of sight. They stood motionless with folded arms—given furiously to think.

One assumes that in any event no officers or dependents of officers are likely to call upon the Fund.

On general principles most people will agree with the defeated Finance Committee of the Club that the members have acted in a most unbusinesslike way in voting so large a sum, but war is a most unbusinesslike business any way, so while we are at it we may as well go the whole hog.

Comprehensive Sympathy.

The following letter has reached the Royal Aero Club:—
Sirs,—The following resolution, expressing our sympathy for the affiliated clubs of the Federation Aéronautique Internationale, was unanimously adopted at the Annual Meeting of the Aero Club of America, held on November 9th, 1914:—

"Whereas, in the great European conflict the ranks of our sister clubs of the Federation Aéronautique Internationale have been thinned as the result of the daring of their members, who have given patriotic service to their countries at the cost of their own lives; and

"Whereas, the Aero Club of America, in common with all aeronautical bodies throughout the world, lament this loss to the science of aeronautics, and their relation as fellow club members; be it therefore

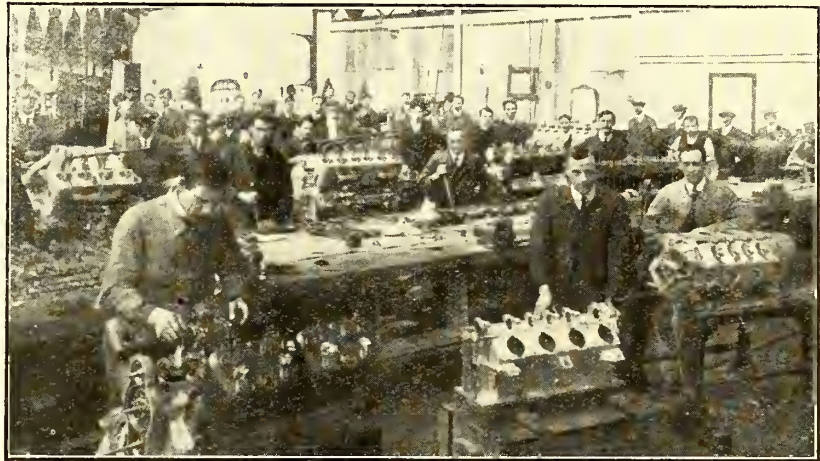
"Resolved, that we inscribe upon our records this expression of our sorrow, and tender our condolences to the Aero Clubs of Austria, Belgium, France, Germany, Great Britain and Russia, in the losses which have come to their membership—and offer this tribute to the genius, the daring and fidelity of such brave men of the air, whose names have become enrolled upon the Honour List of achievement; and be it further

"Resolved, that a copy of these resolutions be forwarded over the signatures of the officers of the Club to each of our sister clubs of the Federation Aéronautique Internationale in token of our fellowship."

(Signed) HOWARD HUNTINGTON (Secretary); ALAN R. HAWLEY (President), Aero Club of America.

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W. E. SCOTLAND, the New Zealand Aviator. Made the longest cross country flight in N.Z. of 100 miles. A record for the whole of Australasia.

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Naval and Military Aeronautics.

GREAT BRITAIN.

From the "London Gazette," December 15th, 1914.

ADMIRALTY, December 12th.

ROYAL NAVAL VOLUNTEER RESERVE.—Temporary commissions in the Royal Naval Volunteer Reserve have been issued as follows:—

Lieutenants.—Farnall Thurston, Alexander Edward Whalley, Francis Cartwright Williams, James David Anderson Ferguson, Herbert Thomas Sullivan, Kenelm Edward Lee Guinness, Herbert Denham Emery, John Longsdon Garle, William Thompson Purves, Richard Vary Kirkman Finlay, G. G. Law, Sydney Bromley, Francis Collier Cooper, N. Mitchell, W. E. de B. Whittaker, G. C. Neilson, Rhys Davies, W. Whittall, H. C. Nalder, G. F. Herron, Duncan Rodger Boyd, Frank B. Kemp, the Right Hon. the Earl of Hardwicke, and Lionel Buckland.

Sub-Lieutenants.—Leslie Terrett Day, Everard John Boothby How, Gaston Emile Bernheim, Lionel Welby Huntington, Kenyon Secretan, Alfred Lloyd Braithwaite, Albert Hansford, Theodore Douglas Hallam, John Kenneth Rankin, Thomas Hillyard Duff, Tacy Millett Winstanley Wallis, Richard Joseph Antony Harding, Edward Ferrar Patterson, Herbert Murray Sabiston, Norman Sinclair Hind, George Graham Eaglesome, Edward Stanley Mercer, Frank Robinson Beavan, Charles William Cassils, William George Gould, John Macfarlan Mitchell, Colin Montague Stuart, Walter Hopkins, Cyril Macey Wright, Charles William Lane Manby, Frederick Ernest Cooper, Victor Richard Gibbs, Ronald Roscoe Thornely, Snowdon Hedley, Arthur James Dawe, Henry Duveen, and Alexander McLeod.

WAR OFFICE, December 15th.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing):—

Lieutenant (temporary Captain) Herbert R. P. Reynolds, Royal Engineers, from a General Staff Officer, third grade, at the War Office, to be a flight commander, and to retain his temporary rank. Dated December 3rd, 1914.

Lieutenant William H. C. Mansfield, the King's (Shropshire Light Infantry), from a flying officer to be a flight commander, and to be temporary captain. Dated December 7th, 1914.

Second Lieutenant James Valentine, Special Reserve, to be a flying officer. Dated August 30th, 1914.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—Royal Flying Corps (Military Wing).—Second Lieutenant (on probation) Robert Loraine is confirmed in his rank.

* * *

A Supplement to the "Gazette" of December 15th, published on December 16th, contains the following military appointments:—

WAR OFFICE, December 16th.

SPECIAL RESERVE OF OFFICERS.—Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—The undermentioned second lieutenants (on probation) to be confirmed in their rank: Leonard Parker and Edward F. Norris.

* * *

A second supplement to the "Gazette" of December 15th, published on December 17th, contains the following military appointments:—

WAR OFFICE, December 17th.

ESTABLISHMENTS.—Royal Flying Corps (Military Wing).—The undermentioned to be flying officers. Dated November 17th, 1914: Lieutenant James L. Jackson, 3rd Battalion the Connaught Rangers, and Second Lieutenant the Hon. William F. F. Sempill (Master of Sempill), Special Reserve.

* * *

From the "London Gazette," December 18th, 1914.

WAR OFFICE, December 18th, 1914.

ESTABLISHMENTS.—Royal Flying Corps (Military Wing).—Lieutenant Robert Loraine, Special Reserve, to be a flying officer. Dated September 3rd, 1914.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—Royal Flying Corps (Military Wing).—Second Lieutenant Robert Loraine to be lieutenant. Dated November 11th, 1914.

A second Supplement to the "Gazette" of December 18th, published on December 19th, contains the following military appointment:—

WAR OFFICE, December 19th.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—Captain Arthur B. Burdett, the York and Lancaster Regiment, a flight commander, to be an adjutant. Dated December 5th, 1914.

* * *

A Third Supplement to the "London Gazette" of December 18th, published on December 21st, contains the following military appointments:—

WAR OFFICE, December 21st.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—The undermentioned appointments are made:—

Wing Commander—Brevet Major Henry R. M. Brooke-Popham, the Oxfordshire and Buckinghamshire Light Infantry, from a deputy assistant quartermaster-general, and to be temporary lieutenant-colonel. Dated November 20th, 1914.

Lieut. C. S. Burnett, Reserve of Officers, to be an adjutant (graded as flight commander), and to be temporary captain. Dated December 6th, 1914.

Lieut. Napier J. Gill, Royal Artillery, a flying officer, to be an adjutant (graded as flight commander), and to be temporary captain. Dated December 6th, 1914.

Flying Officers.—The date of appointment of Lieut. Frank B. Binney, Royal Artillery, as a flying officer is August 5th, 1914, and not as stated in the "Gazette" of October 27th, 1914. Dated December 4th, 1914: Lieut. H. J. Collins, 3rd Battalion the Hampshire Regiment; Second Lieut. L. Parker, Special Reserve; and Second Lieut. E. F. Norris, Special Reserve.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—Royal Flying Corps (Military Wing).—The undermentioned second lieutenants (on probation) are confirmed in their rank: Hereward de Havilland and A. G. Weir.

NAVAL.

The following appointments were made at the Admiralty on December 17th:—

ROYAL NAVAL AIR SERVICE.—Mr. J. T. Bankes-Price has been entered as probationary flight sub-lieutenant, and appointed to the "Pembroke III" for Royal Naval Air Service, to date December 16th.

* * *

The following appointments were made at the Admiralty on December 21st:—

ROYAL NAVAL AIR SERVICE.—The undermentioned have been entered as probationary sub-lieutenants, with seniority as stated:—G. A. Reid, November 19th; F. T. Digby, November 30th; P. Leigh, November 30th; A. G. Shepherd, December 3rd; E. D. Kilner, December 3rd; and R. S. Sorley, December 4th; and all appointed to the "Pembroke III," for Royal Naval Air Service, to date December 19th.

* * *

The following brief notice appeared in the obituary column of the "Morning Post" on December 16th:—

HEAD.—Clement Gordon Wakefield Head, Lieutenant Commander, R.N., aged twenty-nine, in the service of his King and country, dearly loved youngest and only surviving son of Mr. and Mrs. J. J. Head, of Seaford, Sussex.

Lieutenant-Commander Clement Head, R.N., was a young officer who had won on his merits a high reputation as a commander of submarines. If he had not chosen to remain in the Submarine Service he would without doubt have done equally well in the Air Service, for though probably the biggest man who has taken an aviator's certificate in this country—he was about 6 feet 6 inches tall—he had fine hands, and showed, during his period of learning on Salisbury Plain, that he had the makings of a notable pilot.

The Submarine Service has drawn to itself many officers of singularly fine character—the Air Service has been fortunate in obtaining the allegiance of some of the best of them—but never has there been a better in either service than the one whose

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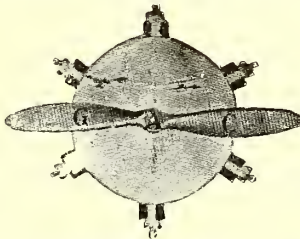
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death is told in the brief lines quoted above. He was a popular officer, in the ordinary acceptance of the term, but over and above mere popularity he inspired deep affection in those who knew him well. To his bereaved parents one can only offer sincere sympathy in their loss.

The manner and place of Clement Head's death has not been made known, but however or wherever it may have been, he went out as an officer in the King's Service should do.

* * *

People who ask questions without thinking have, of course, been inquiring why the Naval Air Service did not discover the German raiders on the East Coast before they arrived, and the "Daily Chronicle" reported, as if it was a discovery, on the 17th, "The Naval Air Service is at work, and a Blyth correspondent states that seaplanes are patrolling the Northumberland coast."

As a matter of fact, the pilots of the R.N.A.S. coast defence stations have been patrolling the whole coast ever since war broke out, and, furthermore, certain fast steamers, specially fitted as seaplane-carrying ships, have been patrolling the whole North Sea from end to end and from side to side, regardless of mine-fields or German ships of superior power.

Being out of the reach of news agency romance, the officers commanding these ships have happily escaped being made ridiculous by the would-be heroes of the Press, but their good service is presumably known in the right quarters, and will doubtless be duly recognised in due course.

Similarly, newspaper people are not welcomed at coast-defence stations, and the officers and pilots thereat also escape popular attention, but their work is done none the less.

Nevertheless, the time has not yet come when aircraft patrols can work at night or in fog—except when it is calm enough for airships to operate—and as the German attack was made at dawn in a mist there was no possibility of seaplanes being out in time to spot the German ships before they reached the coast.

It may also be permissible to point out that bricks and mortar are cheaper than battleships and that it is better to have a good many coast towns destroyed than it is to push battleships out into the North Sea to be torpedoed by submarines; the battleships are needed to destroy the German Fleet when it comes out in force. Furthermore, West Hartlepool is officially designated a fortress in the War Office communiqué, and Scarborough not only has a big wireless station, but is an important railway junction for lines running up and down the coast, which constitute it a point of military interest, so the outcry about the barbarity of bombarding "open towns" is absurd. Whitby is rather a different proposition, but might fairly be assumed to shelter troops. Incidentally, it seems a trifle inconsistent to howl about the damage done to the ruins of Whitby Abbey and to omit any mention of the vandalism which allowed such a beautiful building to become a ruin through sheer neglect.

* * *

Among the gazettes to the R.N.V.R. notified this week are several names well known in aviation. Some are appointed for special duties, but the majority belong to the Armoured Car Brigade, which is controlled by the Air Department at the Admiralty.

The first name to note is that of Mr. Farnall Thurston, who has been with the Bristol Co. since that firm's foundation. He has represented the firm all over Europe and has arranged demonstrations of their machines with excellent results before the War Departments of practically every country. He has come into close contact with the Sovereigns of most of these countries, and the reminiscences of his visits would make a very valuable book. A man of action, possessing unlimited energy, and an unsurpassed knowledge of aeroplanes and of the ways of aeroplane makers, combined with tact, and a knack of getting himself liked, he should be very valuable in his new sphere of life. He has already done good service in obtaining aeronautical supplies from France during the critical period at the beginning of the war.

Mr. Kenelm Lee Guinness is well known as a racing motor driver and the inventor of the K.L.G. ignition plugs.

Mr. W. T. Purves, late of the Arrol-Johnston Co., is a motor engineer of experience, and has already done good work in connection with the enlistment of mechanics for the R.N.A.S. under Squadron-Commander Aldwell, R.N.

Mr. W. E. de B. Whittaker, whose appointment to a sub-lieutenancy was gazetted some time ago, will be remembered as assistant-editor of this paper. During that time his articles on military aviation, which covered a period of two years, prophesied practically just what has happened on active service. To the best of the writer's recollection, if those articles had to be republished in the light of the experience of the last four months, it would not be necessary to go back on any essential statement or opinion therein, which is really a somewhat remarkable achievement.

Mr. W. Whittall went through the China campaign, during the Boxer rising and the relief of the Peking Legations, as Reuter's correspondent. He has since written much on motor-ing, and somewhat on aviation, though his knowledge of the former subject is much greater and his writings on it have been of correspondingly higher value.

Lord Hardwicke has long been interested in aviation. He was passenger with the late Captain Bertram Dickson, R.A., when that officer won the passenger-carrying prize at Bournemouth in 1910. During the agitation in favour of adequate aerial defence in 1912 and 1913, when Colonel Seely nearly succeeded in misleading the people of this country as to the true state of affairs, Lord Hardwicke asked several very pertinent questions in the House of Lords, so that to him is due some of the credit for our present happy position in this respect.

Mr. Snowdon Hedley, appointed to a sub-lieutenancy, will be remembered as flying for Bulgaria in the early stages of the war with Turkey. Since his return to this country he has been engaged in the motor trade. He is a notably good car driver, as well as possessing mechanical aptitude.

* * *

The "Telegraph" is responsible for the following:—

"For many weeks the commons and open spaces around London have witnessed the practising of the Royal Naval Air Service armoured cars. There are many squadrons of these in existence, each consisting of four Rolls Royce cars, fitted with maxim quick-firers in revolving armoured turrets, a one or three-pounder gun fitted on another chassis, a wireless equipment Wolseley car, two supply 'tender' Talbot cars, and a Red Cross car, so that the whole squadron is a complete warship on wheels. Their extreme mobility has proved their use at the front, especially in village fighting.

"Besides the armoured cars, each squadron has a number of motor-cyclists attached as scouts. Fleet Street this week had the presence of a Zenith motor-cycle carrying a maxim gun as its side-car equipment, with a gunner and driver. The Motor-cycle Gun Brigade and the Armoured Car Naval Division are growing daily, so that the latter has now a complement of nearly 2,000 officers and men. The Admiralty has accepted as a gift from the Edison Bell Company 500 gramophones, with 12,000 'Winner' records, for the use of the Fleet. The first consignment has been sent to Sir John Jellicoe. The Naval Air Service also hopes to share in the distribution. As 120 cars were sufficient to round up De Wet, the motor-car has proved a 'fighting horse' of no mean value."

It may be well to point out very distinctly that although the Armoured Car Brigade—which one gathers is its correct title—is being organised by the Air Department at the Admiralty, it is in no sense part of the Royal Naval Air Service. Certain officers of the R.N.A.S. happen to have been lent to this unit to assist in its organisation, but officers R.N.V.R., attached to the Armoured Car Brigade, have no right to pass themselves off as officers R.N.A.S.

One regrets to see, in the obituary column of a certain paper, an unfortunate young motor-cyclist who was attached to this unit, and who was killed while on a practice run, described as "of the Royal Naval Air Service," and as being "killed on manoeuvres." This sort of inaccuracy can do no good to anyone concerned.

MILITARY.

The following passage in the official "Eye-witness's" narrative, published on December 17th, relates to aircraft and supplements those passages already published:—

December 13th.

The weather has on the whole been rainy and very windy, though Saturday was one of the finest days we have had for some time. Over large areas also the clouds have hung as low as 400 feet. Since the German anti-aircraft guns make fairly accurate shooting up to a vertical range of 8,000 feet, to say nothing of the rifle and machine gun fire, it can be appreciated that the conditions have not been ideal for aerial reconnaissance.

On the other hand, a low-lying layer of clouds may not be such a disadvantage to errands of destruction. It may be thick enough to prevent the observation and identification of comparatively small objects such as those whose presence it is usually sought to discover, but not to hide the features of the country, such as towns, villages, and rivers, and so prevent an aviator orienting himself by sight. When this is so he can fly above the cloud-bank until he arrives over the point which he wishes to attack and then drop his bombs unseen from below or he can descend and drop them from a lower altitude. It is easier to discern large objects on the ground through cloud than it is for those below to see an aeroplane through the same medium. The moral effect of "bolts from the blue," or rather from the blank grey, is somewhat greater than when the destroyer is actually seen.

* * *

Lieut.-Col. Brooke-Popham, whose appointment as wing commander was gazetted on the 21st, is one of the early members of the R.F.C., to whom the Corps owes much of its present efficiency. He commanded No. 3 Squadron from its formation, and brought it to a very high state of training. Not only is Col. Brooke-Popham a good flier, but he is an excellent judge of an aeroplane, and as a practical man his opinion, based on real knowledge, is worth having on anything affecting aviation. Over and above his aeronautical ability, he is a good soldier, which probably accounts for the personal esteem in which he is held throughout the Corps.

* * *

Captain H. P. P. Reynolds, R.E., whose appointment as Flight Commander is gazetted, was one of the Aeroplane Section of the old Air Battalion, under Captain (now Lieut.-Colonel) Fulton, R.A., and is therefore one of the pioneers of military aviation. Since then he has done much good work, and was noted in the King's Birthday honours for promotion

to major by brevet on attaining substantive rank of captain. For many months past he has been partially laid up as the result of a motor accident, and during that period he has been doing duty in the Department of Military Aeronautics at the War Office.

* * *

Among the casualties of last week appears the name of Lieutenant William Findlay Robertson Dobie, Gordon Highlanders (missing, believed killed). Lieut. Dobie was born on October 15th, 1887. After serving in the ranks for more than six years he was gazetted second lieutenant in the Gordon Highlanders in August, 1911. Joining the Royal Flying Corps, Reserve in April of this year he was appointed lieutenant on July 15th. He learned to fly at the Bristol School at Brooklands, his certificate being granted on April 1st, 1913. He joined the Gordon Highlanders only a month or so ago, having gone out in charge of a draft from the depot.

* * *

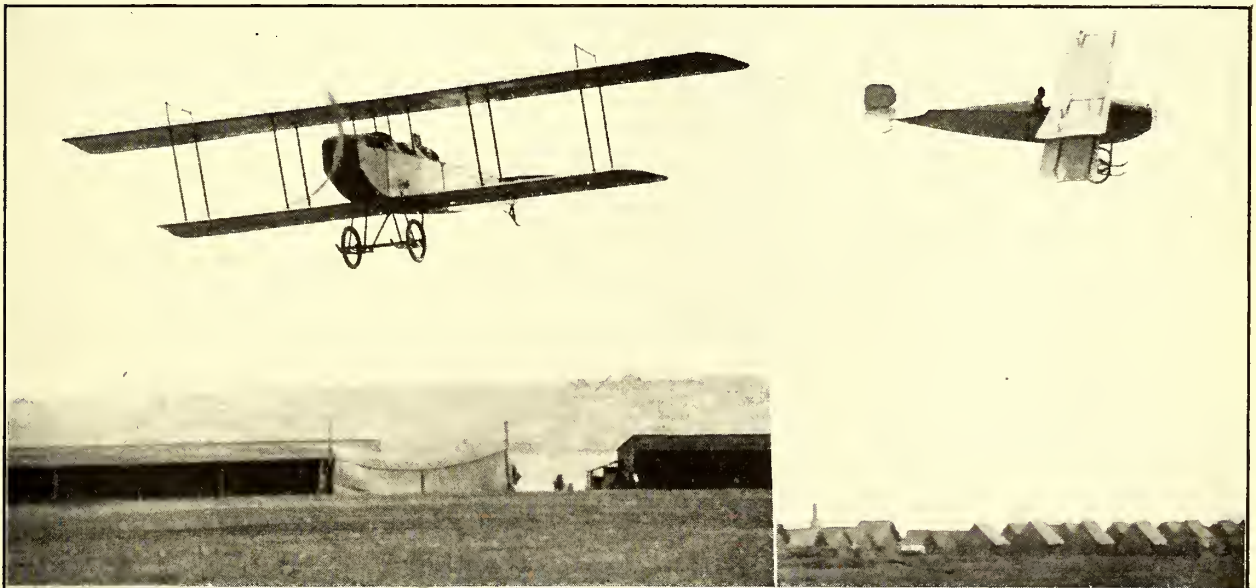
The engagement is announced, and the marriage will shortly take place, between John Norman Fleteher, Royal Engineers and Royal Naval Air Service, eldest son of Mr. and Mrs. William Charles Fleteher, of Sutton, Surrey, and Mercedes Mary, daughter of Mr. and Mrs. Frederiek Getty, of Hoylake, Cheshire.

* * *

An R.G.A. officer, writing last week, after saying that the troops are all "in the best of form and extremely comfortable," goes on:—

"Our aeroplanes are still doing splendid work, despite the high winds and the general unsuitability of the weather. Every morning they reconnoitre the enemy's country, usually facing a heavy fire of shell, rifle bullets, and machine guns. When their report comes in, any change of batteries is noted, and our batteries are ranged on new targets. They have also been instrumental in bringing to earth several German captive balloons which are used for the purposes of observation by the enemy. Last of all, they patrol our lines, and tend to prevent any hostile aircraft penetrating them.

"I saw a fine piece of work of this kind by one of our aviators yesterday. A fairly fast German biplane of a new pattern came over our lines. A strong wind was blowing from the enemy's lines to our lines. The German plane therefore appeared very rapidly. One of our Bristol planes rose and began to catch up in order to get above the enemy, and this manœuvre was fraught with considerable danger to our airman, as the German did his best to prevent it by rifle and revolver fire from his machine. At last, however, our biplane



The New Type Military Curtiss Biplane performing over a Training Camp of the U.S. Army. Its speed variation is from 40 to 84 miles an hour with a 90-h.p. Curtiss engine.

got on the same level as the German. The German then attempted to make for his lines, but, thanks to the adverse wind and the skill of our fellow, he was absolutely prevented from making any headway. It was really a very thrilling sight watching these two biplanes. The German would dodge from side to side, then plane down and make off in another direction, whilst our plane would combat every move of the enemy in a most splendid fashion. It reminded one of a hawk circling round a crow. At last the German gave it up and planed down, and landed behind our lines. He was not wounded at all but utterly beaten, and, as I heard one man express it, "he came down with cold feet."

[The performance is credited to a Bristol, and if this is the case the machine must have been one of the new Barnwell-Busteed scouts, for no other Bristol would be fast enough for the work. On the other hand the description coincides so exactly with the performance of an Avro pilot a little while ago that it seems to have been the incident described last week in which the machine was brought down and claimed as a R.F.C. prize next day.—Ed.]

* * *

A non-commissioned officer writing home under date December 3rd, says:—

"Reconnaissance by aeroplane is so effective that surprises are impossible. A flanking movement by one commander is immediately discovered by the other, and a countermove is made. Regiments are thus moved up opposite other regiments, and nothing but the man behind the gun can win the battle, and owing to the deadliness of modern weapons each side has to dig itself into the ground to escape annihilation."

* * *

An erstwhile habitué of Hendon, now serving in a London regiment engaged in coast defence work, sends an interesting example of the extremely elementary knowledge of aircraft possessed by many officers in the King's Services. His company was recently stationed near a certain civilian aerodrome, when two box-kites passed overhead. The O.C., who is an extremely smart soldier in the ordinary way, resolved to improve the occasion by lecturing his men on the new arm. He explained to the company that these aeroplanes were the latest type military machines, and that he recognised them as such by the "front elevator." Sudden collapse of Private X. . . . !

* * *

The "Spalding Free Press" of December 8th describes the homecoming of an officer of the Royal Flying Corps who has distinguished himself on active service, having been mentioned in despatches, specially promoted, and awarded the Cross of the Legion of Honour. After an enthusiastic reception by the local municipal authorities and boy scouts, he was compelled, despite his modesty, to describe his experiences. He blushing admitted that on one occasion he had flown a hundred miles into the enemy's country and back. Several times he had encountered enemy aeroplanes and attacked them when possible, but he had yet to see a Zeppelin. On one occasion he said he had tried to take a Taube (a genuine one) by surprise from the rear, but the German pilot happened to turn round and saw them, and loosed off with his revolver. The R.F.C. passenger replied, but without success, and the enemy dived for it, eventually escaping (as the local reporter puts it) "beyond the Rhine." He admitted that the Royal Flying Corps was doing well generally, and hoped to get a great many new machines in the near future. Zeppelins had not done anything yet, but he was of the opinion that they might be of some use owing to their weight-lifting powers. He had done some bomb dropping himself, intending to damage railway crossings, bivouacs, and similar points, and occasionally petrol stores, etc., in towns, carefully trying to avoid damage to non-military property. He had been brought down only once by rifle fire, though his machine had often been hit, and that once he was able to glide to the British lines.

* * *

Mr. B. C. Hucks, 2nd Lieut. Royal Flying Corps, has been invalided home, suffering from a recrudescence of the pleurisy which laid him up early this year. However, he hopes to get out for service again before very long.

FRANCE.

Through the kindness of a friend in France THE AEROPLANE is able to reproduce the following notice which has been distributed by French aviators over the German troops:—

An die DEUTSCHEN und POLNISCHEN Soldaten

Das Russische Heer hat soeben einen grossen Sieg davongetragen. Es ist in Ostpreussen eingedrungen und Schlesien wird bedroht.

Die Russen marchieren auf THORN und KRAKAU, die Oesterreicher fliehen mutlos nach den hohen, mit Schnee bedeckten Karpathen.

DEUTSCHE SOLDATEN,
eure Verluste sind ungeheuer und eure Anstrengungen nutzlos.

POLNISCHE SOLDATEN,
der Zar wird das gegebene Wort halten. Er wird POLEN in seiner Einheit wiederherstellen. Kämpft nicht länger gegen die mit den Russen verbündeten Franzosen, die euch befreien und als Brüder betrachten.

Alle, welche die Waffen niederlegen, -werden von den Franzosen in Städten mit einem milden Klimat gut behandelt und reichlich gepflegt.

which, being interpreted, means, more or less:—

TO THE GERMAN AND POLISH SOLDIERS.

The Russian Army has just gained a great victory. It has entered East Prussia and threatens a blockade.

The Russians are marching on Thorn and Cracow, the Austrians are flying discouraged to the snow-covered heights of the Carpathians.

German Soldiers! Your losses are enormous, and your exertions useless.

Polish Soldiers! The Czar will keep his pledged word. He will restore the unity of the Poles. Fight no more against the French, who are allied to the Russians, who will free you and treat you as brothers.

All who lay down their arms will be kindly treated and well fed by the French in towns with a mild climate.

* * *

It was semi-officially stated from Paris on December 16th, that in spite of the atmospheric conditions French aeroplanes had been flying the last two days over the enemy's lines at a height of less than three thousand feet and had dropped several bombs successfully, particularly in the region of the Forest of Houthulst (Flanders).

* * *

It was reported from Paris on Thursday, December 17th, that a dispatch from Belfort describes thus the recent attacks on Freiburg-im-Breisgau:—

"On December 4th, aviators from Belfort dropped six bombs on Freiburg-im-Breisgau with good effect. They had made a detour over the Black Forest to reach Freiburg in order to throw the Germans off the scent.

"On December 9th the squadron, notwithstanding a furious cannonade, dropped eighteen bombs on Freiburg from a height of about 3,000 feet. Fourteen of these exploded, and caused enormous damage."

It was rumoured in Paris on Wednesday, December 16th, that British aviators made another raid on Friedrichshafen on the 15th. The rumour is groundless and probably arose from confusion with the Freiburg raid.

A telegram from Belfort to Paris denies the news which has obtained publicity in certain countries to the effect that two out of the three French aviators who flew over Freiburg-in-Breisgau were killed between Neubreisach and Colmar. The three aviators returned safe and sound.

It is reported in the "Times" that two German aeroplanes flew over Dunkirk on December 16th. They did not drop bombs. On the contrary, their business was of a conciliatory nature. One of them dropped in the suburbs a bag containing a message from a German general asking the French authorities to make inquiries for the body of his son, who was killed recently near Soissons. The other Taube also dropped a message giving news of a French aviator who was captured in the German lines, and wishing all French aviators a happy Christmas.

[One is left in doubt as to whether the message was "writ sarcastic" or not, for surely no British daily paper would be so pro-German as to admit that any German could possess such a sporting spirit. Incidentally, it is of interest to note that Mr. Wade's story which appears in this issue was written a week before this message was received.—Ed.]

The "Times" correspondent wired on December 20th that a German seaplane flew over Calais that afternoon and dropped two bombs. One bomb fell into the sea near Fort Risban, one of the oldest fortresses in France, built in the time of Caligula, while the other fell into the harbour 30 yards from the Hotel Maritime, which was the target aimed at.

A party of sharpshooters fired upon the seaplane from a platform, but the machine was soon well out of range. The whole incident was over in two or three minutes, and the people of Calais for the most part remained perfectly calm.

[It would, however, be interesting to know whence that seaplane started and how it escaped observation along the Belgian coast. While time is being wasted building slow B.E.2cs, we might produce three times as many really fast machines and stop all these German raids.—Ed.]

A Taube attempted to reach Paris on Sunday, December 20th. It was pursued by French aeroplanes, and it is reported that it was brought down at Pontoise.

It is reported from Paris that the military aviators Destouches and Rugère were killed on December 19th. Their machine took fire when over Vaugirard, and fell among the abattoirs in that district.

Rumour has it that the Morane parasol, the type of machine which caused the death of M. Marc Pourpe, has been "suppressed" in the French army. This is not at all surprising, as it is an exceedingly difficult machine to land even for the best pilots, though, owing to the pilot being able to see out of it, it is not quite so bad as the ordinary type Morane, which for some incomprehensible reason has been ordered by the British Army.

GERMANY.

According to a telegram from Berlin to the "Telegraaf" of Amsterdam, dated Tuesday 15th, French aviators again dropped bombs on Freiburg, in Baden, on Monday 14th. This would make the third air raid on Freiburg. The first was officially announced on December 6th, and the second successful raid was mentioned in the evening French communiqué of December 10th.

The Berlin papers report that two hostile aviators appeared on the night of December 17th to 18th over Saarburg, Lorraine, throwing ten bombs. A non-commissioned officer and one Uhlan were killed, and a servant girl was severely wounded. The material damage was insignificant. Later the same aviators dropped two bombs on Heming and two on the railway station at Rieding.

The "Matin's" special correspondent at Berne states that in

the last French raid on Freiburg the aviators took the greatest pains to avoid doing any damage to civilians or to the famous Gothic cathedral. In the course of their raid they followed the line of the railway from Brisach to Freiburg, and destroyed a great portion of it with their bombs. He learns that their projectiles, thrown on the hangars of the Aviation Company, caused enormous damage.

[From the attention devoted to Freiburg one may deduce that it was thither that the Aviatik Works—which make some of the best German aeroplanes—were removed from Mulhausen in the manner indicated by our Danish correspondent.—Ed.]

The "Matin's" special correspondent at Berne also says that he has it from a good source that the Zeppelins which are under construction at Friedrichshafen, and are turned out at the rate of one a month, are all of the same type. They have a speed of fifty miles an hour, and are able to lift a weight of five tons.

Many attempts have been made to discover a practical system of armouring these Zeppelins, but so far with complete lack of success. It has even been found necessary to do away with the aeroplane cannon on the higher platform for fear of fire. The correspondent believes that the English aviators seriously damaged at least one Zeppelin in their recent raid. It is certain, he says, that no dirigible has left the hangars since that date.

[It would be interesting to know where Germany's Zeppelins are stored. There must be several hundreds of them now if all the "special correspondents" are to be believed. Perhaps they are disguised by being tied in bundles and packed in boxes.—Ed.]

Miss Blyth, a lady who has recently returned to England from Metz described the absolute confidence of the Germans.

"You might just as well wait and go back home in one of our Zeppelins," the officers used to tell her when she complained of her inability to leave. One of the most popular postcards in Metz was a picture of a horde of German soldiers dancing the tango in Buckingham Palace!

RUSSIA.

It was reported from Petrograd on December 20th that in East Prussia a daring air raid was made by a Russian officer over Stallupoenen. It was alleged that the station was reduced to ruins, and a considerable part of the railway line was destroyed by the aviator's bombs.

The Petrograd correspondent of the "Morning Post," whose continual childish boasting about Russia and all its doings is a continual jarring note in that otherwise excellent paper, reports as follows:—

"It is now some time ago that I was accorded the exceptional privilege in war time, even for an ally, of visiting one of the Russian great aeroplane factories. Several have been established to keep up the large supply required by the various armies in the field. The one I visited can turn out five aeroplanes per day, or thirty a week. Imagine a London railway terminus, considerably reduced in size and with a broad gallery running all round half-way to the roof. That is the fitting department. The whole floor area is crowded with completed aeroplanes in the rough, some awaiting their engines and others certain other pieces of mechanism used in active war in the air." And so on, at great length, besides a statement that "everything, including engines," is made on the spot.

He concludes thus:—

"These fragile skeletons seemed to me almost as delicate as a watch, but an aviator assured me that they are enormously strong, and require little attention in good hands. 'But don't you go all over and tighten up these things before flying?' I asked. 'Well, I don't if I have my own machine,' was the reply. 'You see you can tell by its behaviour in the air whether everything is right as regards elasticity or rigidity. Of course, some fellows will shake anything to pieces when they go up, but that's where one's skill comes in. I don't bother about my plane once a month. Of course, if you come into very bad weather or have to strain your wings for something exceptional, you feel directly that this or that part is a bit slack, and you tighten up accordingly. But they stand a good deal. Look what they're made of, look at this and that.' I looked, and was quite convinced."

If that is how Russian aviators treat their machines one can understand the reasons for a fairly big casualty list. Also, if

his figures as to output are correct one is surprised that Russia is so anxious to buy aeroplanes and their parts elsewhere.

ITALY.

Official trials of the Caproni 300-h.p. biplane Avion with 25-millimetre gun took place last week. This machine is armoured as well as armed, has the projecting-nose type of body, double control, and three 100-h.p. Gnomes. Of these, one is behind the main planes and the others in front at the sides of the "fuselage," and all three are independent of each other. The main planes have a span of 70 feet.

It is admitted that fixed motors would be more satisfactory—probably rather for convenience of fitting and enclosing and for cleanliness than for efficiency, as we learn that the "warplane" flies comfortably on only one motor.

We are promised quite simply two more of this type—viz., a 600-h.p. and a 1,000-h.p.! As Ing. Caproni never talks under certain sure, I surmise that at least the drawings for them are ready.

While on the subject of armour, why not use some patent car brake-lining instead of steel plates? Lightness, strength, economy, etc.

As to the big Voisins for which the Air Battalion is said to be lusting, I have to retract something of what I wrote as to their being built here. It slipped my memory that the S.I.T. Co. hold the manufacturing rights of the Voisin firm, though they have not, I believe, actually undertaken the building of any metal aeroplanes so far.

Signalling à la Venetian blind is, I was informed recently, thought well of down Turin way nowadays. One section—about the middle one—of the fuselage of an aeroplane is covered with "Venetian blind," one surface of which is painted the colour of the rest of the fuselage, while the other is pure white, dead black, or any colour in strong contrast to that of the fuselage body. To signal, work the blind. It appears to me that considerable skin friction must occur as well as the device giving the effect to the onlooker of the tail of the machine having come adrift! The impression of feathers, too, might be productive of much light literature from the pens of the local reporters.

Captain Guidoni allows us to opine that he carried out actual experiments in the launching of torpedoes from his hydro-biplane with the modified Forlanini floats just before the present state of things started. He, however, awaits very hopefully the advent of the giant seaplane in order to attain perfect results.

M.Q., which has been for a considerable time out of action, is now reported as reinflated and in the air at Venice.—T. S. HARVEY.

BELGIUM.

According to fugitives who have arrived at Sluis from Westcapelle, a bomb thrown by an aviator last Thursday resulted in the death of forty German soldiers, and a hundred others were wounded. The bomb fell on a train as it was entering the station, and evidently exploded some ammunition.

Mr. A. Beaumont, of the "Telegraph," writing on December 18th from Northern France, says:—

"A Belgian aviator who enlisted only a few weeks ago, and who is but 20 years of age, has distinguished himself by a daring flight over Ostend, Bruges, and several other places, where he dropped bombs on the German troops and caused a panic in their midst. Near Ostend he observed a convoy of supply which was slowly moving along. He flew over it very low and dropped two bombs, which struck three of the motor-lorries and destroyed them. Near Bruges he dropped several bombs on a detachment of cavalry which was concealed behind a farm, and dispersed it. The daring air-pilot has been already raised to the rank of lieutenant. After his last exploit his machine was riddled with bullets, and he landed just inside the Belgian lines in the flooded district, and he and his machine were rescued by Belgian soldiers."

[One would like further particulars of this wonderful Belgian, for it has been stated by people who have been in the war area recently that the Belgian flying corps ceased to exist after Antwerp fell.—Ed.]

According to a telegram to Paris from Basle on Tuesday, December 15th, two Zeppelin sheds had been constructed near Namur. They are provided with searchlights for locating aircraft. [It is more likely that they are sheds for small airships,

as the country round Namur is more suitable for airships than for aeroplanes, being hilly and thickly wooded.—Ed.]

The "Times" reports that the Allied aviators made successful attacks on the Germans in Belgium on Saturday, December 19th. In the afternoon 12 bombs were dropped on the Zeppelin sheds in Brussels. On the night of the 20th another raid was made by a British naval aviator on the German positions near Ostend. He set out in complete darkness and returned an hour later, having dropped nine bombs, which he is convinced caused considerable damage. This raid, which is the first instance of a flight into the enemy's territory made throughout in complete darkness, is a remarkable exploit.

Against this a telegram from Brussels via Berlin states that a hostile aviator flew over the suburb of Etterbeek on December 20th and tried to throw bombs, but was driven off by the fire of the German soldiers.

The "Tijd" reports that the aeroplanes of the Allies are seen at all times of the day between the Yser and the Dutch frontier, and during the night they examine the whole region with searchlights. Last Saturday a British aviator dropped a bomb on the barracks at Bruges.

[One has doubts about the searchlights, which would only draw fire.—Ed.]

HOLLAND.

It was reported from Amsterdam on December 15th that the aviator who descended in the province of Zeeland on the 14th and was interned, as reported at the time, is an Englishman. In a statement which he made to a correspondent of the "Telegraaf," he said he ascended, with two other British aviators, from Dunkirk in the morning, his objective being Bruges. He dropped five bombs there in order to destroy the workshops in which German submarines are being put together. Afterwards he proceeded in the direction of Zeebrugge, but lost his way owing to fog, and came down near the Dutch village of Breskens.

The "Central News" correspondent states:—"His two comrades descended in the sea, and were rescued by the Channel steamer 'Oranje Nassau.'" This is obviously incorrect, as the pilot and mechanic picked up by the "Oranje Nassau" were found near the English coast, and their machine, a seaplane, was found later on by a British destroyer and towed home.

JAPAN.

It is reported by the "Express" that Baron Shigeno, son of a Japanese general, has, with a Japanese friend, joined the French flying corps. Baron Shigeno learnt flying in France previous to the war. One awaits confirmation of the report from France.

SOUTH AFRICA.

Reuter's special correspondent, telegraphing from Chaukaib, German South-West Africa, on December 17th, reports that a German Taube flew over the camp on the 16th. He flew at a very high altitude, and, coming down to some 5,000 feet, he launched two shells. The first burst without doing any harm, but the second fell near a knot of men, nine of whom were wounded by splinters, some of which also pierced an ambulance operating tent where a red flag was flying.

[The Germans in South Africa evidently possess "some" bomb-dropper if he really aimed at and hit an ambulance tent at 5,000 feet.—Ed.]

Southampton District.

A large Sopwith-Sunbeam tractor was out from Woolston early Monday morning, with Mr. Mahl as pilot. The machine flew very well, and the Sunbeam engines, with which the Sopwiths are now fitted, seem to be unusually quiet. After this had returned, Mr. Mahl went off with a small Sopwith-Gnome tractor, and the performance was splendid in every way. These small swift Sopwith tractors are giving very fine results. Although quite small these machines are two-seaters. Another of these speedy little machines left Woolston on Wednesday morning and passed its trials straight away.

There is a type of Sopwith which seems to have been neglected for some time past, and that is the Bat-boat. The few which have been built have been very successful, especially as regards having a long life, and as this type of machine is considered to have great possibilities, it seems strange there are not more of them about.

Some New Pilots.

The following is the list of new pilots formed since the last list was issued in this paper:—

946, Flight Sub-Lieut. Reginald Eycott Nicoll, R.N.A.S. (Maurice Farman biplane, Central Flying School, Upavon), Oct. 21st, 1914; 947, Flight Sub-Lieut. Joseph Alexander Allen, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), Oct. 23rd, 1914; 948, Flight Lieut. Christopher Hornby, R.N.A.S. (Short biplane, Naval Flying School, Eastchurch), Oct. 24th, 1914; 949, Flight Sub-Lieut. Edwin Harris Dunning, R.N.A.S. (Short biplane, Naval Flying School, Eastchurch), Oct. 24th, 1914; 950, Flight Sub-Lieut. Tom Harry England, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), Oct. 25th, 1914.

951, Flight Sub-Lieut. Evan Bernard Morgan, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), Oct. 25th, 1914; 952, Cyril Charles Wigram (Maurice Farman biplane, Military School, Brooklands), Oct. 26th, 1914; 953, Flight Sub-Lieut. Marmaduke Scott Marsden, R.N.A.S. (Henry Farman biplane, Central Flying School, Upavon), Oct. 26th, 1914; 954, Malcolm Grahame Christie (Caudron biplane, Prosser School, Hendon), Oct. 27th, 1914; 955, Flight Sub-Lieut. Allan Knighton Robertson, R.N.A.S. (Short biplane, Royal Naval Flying School, Eastchurch), Nov. 5th, 1914; 956, Flight Lieut. John William Kidston Allsop, R.N.A.S. (Short biplane, Royal Naval Flying School, Eastchurch), Nov. 5th, 1914; 957, Lionel Franklin Beynon (Wright biplane, Beatty School, Hendon), Nov. 5th, 1914; 958, William Harry Ellison, R.N. (Bristol biplane, Royal Naval Air Station, Hendon), Nov. 6th, 1914; 959, Flight Sub-Lieut. Aylmer Fitzwarine Bettington, R.N.A.S.; 960, Julian Pauncefote Inglefield (Maurice Farman biplane, Military School, Brooklands), Nov. 7th, 1914.

961, Flight Sub-Lieut. John Martin d'Arcy Levy, R.N.A.S. (Maurice Farman biplane, Central Flying School, Upavon), Sept. 23rd, 1914; 962, Flight Sub-Lieut. Bertrand Lawrence Huskisson, R.N.A.S. (E.A.C. biplane, Eastbourne School, Eastbourne), Oct. 28th, 1914; 963, Sergt. William Sharpe, R.F.C. (Maurice Farman biplane, Royal Flying Corps, Netheravon), Nov. 6th, 1914; 964, John Harold Rose (Hall biplane, Hall School, Hendon), Nov. 7th, 1914; 965, Jesse Albert Easter (Grahame-White biplane, Grahame-White School, Hendon), Nov. 7th, 1914; 966, Lieut. Eustace Osborne Grenfell, D.C.L.I. (Maurice Farman biplane, Central Flying School, Upavon), Nov. 9th, 1914; 967, Robert William Alexander Ivermee (Caudron biplane, British Caudron School, Hendon), Nov. 10th, 1914; 968, 1st Class Air Mechanic James Douglas Clarke (Avro biplane, Central Flying School, Upavon), Oct. 28th, 1914; 969, Commander R. M. Groves, R.N. (Maurice Farman biplane and Bristol biplane, Royal Naval Air Station, Hendon), Nov. 15th, 1914; 970, Flight Sub-Lieut. Douglas Iron, R.N.A.S. (E.A.C. biplane, Eastbourne School, Eastbourne), Oct. 28th, 1914.

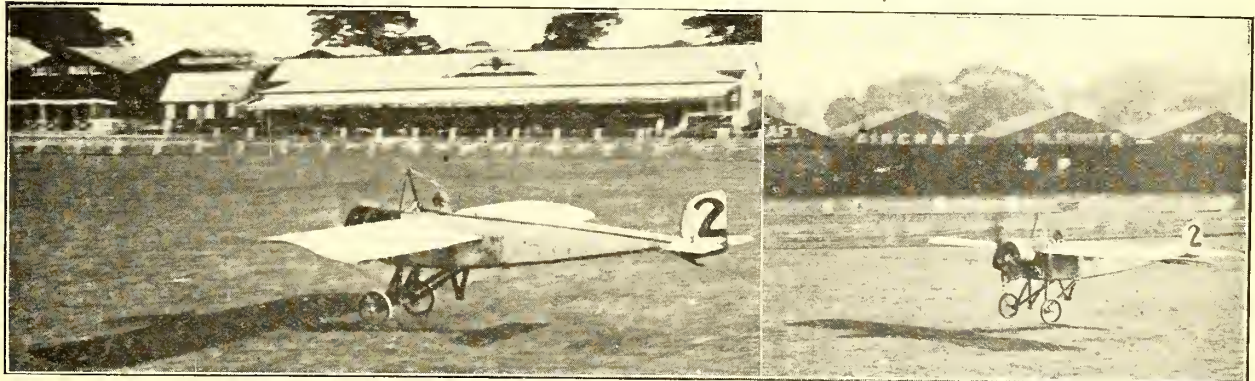
971, 2nd Lieut. John Eustace Arthur Baldwin (8th Hussars) (Maurice Farman biplane, Netheravon School, Netheravon), Nov. 17th, 1914; 972, 2nd Lieut. Erik Harrison Mitchell

(Maurice Farman biplane, Netheravon School, Netheravon), Nov. 17th, 1914; 973, Francisco Carabajal (Grahame-White biplane, Grahame-White School, Hendon), Nov. 18th, 1914; 974, Captain Gerald William Huntbach (1st King's Shropshire Light Infantry) (Maurice Farman biplane, Netheravon School, Netheravon), Nov. 18th, 1914; 975, Lieut. Alan John Lance Scott (Sussex Yeomanry) (Maurice Farman biplane, Netheravon School, Netheravon), Nov. 20th, 1914; 976, Alfred Huggins (Maurice Farman biplane), Military School, Brooklands, Nov. 24th, 1914; 977, Flight Sub-Lieut. Eric John Hodson, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), Nov. 25th, 1914; 978, Flight Sub-Lieut. Eric Fabricius Bray, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), Nov. 25th, 1914; 979, Lieut. Michael Lloyd Braithwaite (Maurice Farman biplane, Netheravon Flying School, Netheravon), Nov. 25th, 1914; 980, Flight Sub-Lieut. John Osborn Groves, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), Nov. 25th, 1914.

981, Edward Stanley Skipper (M. Farman bi., Military School, Brooklands), Nov. 25th, 1914; 982, Flight Sub-Lieut. Edmund Ivan Montford Bird, R.N.A.S. (Bristol bi., Naval School, Hendon), Nov. 25th, 1914; 983, William Geoffrey Moore (Wright bi., Beatty School, Hendon), Nov. 26th, 1914; 984, 2nd Lieut. Clifford Alban Hooper, R.F.C. (M. Farman bi., C.F.S., Upavon), Nov. 18th, 1914; 985, Lieut. Charles Stuart Burnett (Highland L.I.), (M. Farman bi., C.F.S., Upavon), Nov. 24th, 1914; 986, Frank Sowter Barnwell (M. Farman bi., Military School, Brooklands), Dec. 9th, 1914; 987, Flight Sub-Lieut. Guy William Price, R.N.A.S. (G.-W. bi., Grahame-White School, Hendon), Dec. 9th, 1914; 988, Flight Sub-Lieut. Bernard Osbourne Ffield, R.N.A.S. (G.-W. bi., Grahame-White School, Hendon), Dec. 10th, 1914; 989, John Claude Horsey Barfield (L. and P. bi., L and P. School, Hendon), Dec. 12th, 1914; 990, Charles Percival Wilson (M. Farman bi., Military School, Brooklands), Dec. 14th, 1914.

991, Flight Sub-Lieut. Thomas Spencer, R.N.A.S. (M. Farman bi., Netheravon), Oct. 27th, 1914; 992, Flight Sub-Lieut. Edward John Cooper, R.N.A.S. (G.-W. bi., Grahame-White School, Hendon), December 14th, 1914; 993, Flight Sub-Lieut. Percy Ethelwyn Hunt Wakeley, R.N.A.S. (G.-W. bi., Grahame-White School, Hendon), Dec. 14th, 1914; 994, 2nd Lieut. Malcolm David Methven (M. Farman bi., Netheravon), Dec. 14th, 1914; 995, 2nd Lieut. Henry Bayly Reginald Grey-Edwards, R.F.A. (M. Farman bi., Military School, Brooklands), Dec. 14th, 1914; 996, George Gilbert Algernon Williams (M. Farman bi., Netheravon), Dec. 15th, 1914; 997, Stanley Graham Gilmour (M. Farman bi., Netheravon), Dec. 15th, 1914; 998, Lieut. James Cecil Thornton, R.F.A. (M. Farman bi., Netheravon), Dec. 15th, 1914; 999, Flight Lieut. Robert Hilton Jones, R.N.A.S. (Short bi., R.N. Flying School, Eastchurch), Dec. 17th, 1914; 1,000, Flight Sub-Lieut. Roger Martin Field, R.N.A.S. (G.-W. bi., Grahame-White School, Hendon), Dec. 18th, 1914.

1,001, Flight Sub-Lieut. Kenneth Falshaw Watson, R.N.A.S. (Grahame-White biplane, Grahame-White School, Hendon), Dec. 19th, 1914; 1,002, Maurice Leigh Gardner (Wright biplane, Beatty School, Hendon), Dec. 20th, 1914.



A REMINISCENCE OF PEACE.—Two views of M. Garros on the Morane racing machine. On the left getting off; on the right landing. It may be seen how useless such a machine would be for military purposes.

O.H.M.S. Badges and the Trade.

Numerous employees in aeroplane firms seem to have been interested, some even moved to wrath, by certain remarks in this paper on the subject of aircraft workers, enlistment, shirking, wearing badges and other cognate subjects.

One excellent letter says:—"There is no doubt that the subject is full of complex questions. It should be patent to almost everyone that the time is nearly or quite ripe for conscription. This undoubtedly would tend to improve the physical standard of the men of England, and procure sufficient men to avoid 'working the willing horse to death.' One cannot but feel disgust at seeing so many obvious shirkers, and a great percentage of the young men of to-day have earned the right to take the place of the 'longshoreman' who, when pushing a craft from the beach side to his companion, said 'You shove her off while I hollers.' No doubt the badge covers many shirkers when handed to any and all employees working on Government orders. Personally, it affects me very slightly, being over the age for any corps yet formed, though looking younger through a strenuous life as an oarsman, footballer, and in other branches of athletics."

The writer of these sound views is an employee in a successful aeroplane firm, and is old enough to see things sensibly. Of course there would be no trouble at all if conscription were in force, for then we should be in the same position as the French. All workers of military age would have been called up on the mobilisation of the army. Those who, being employed by armament firms, were particularly valuable workmen would have been sent back on requisition by the heads of the firms, and would be going to work in uniform, and there would be an end of all argument.

As it is, clerks, draughtsmen, apprentices, labourers, and workers of no particular skill, who could easily be replaced by older or physically unfit men, are allowed to parade about wearing O.H.M.S. badges. Naturally, costing clerks, specially skilled draughtsmen, and others possessing special knowledge should be retained, for they are more valuable thus employed than they would be at the butt of a rifle, but as a general rule most of the younger men of these classes and a very large percentage of wood-workers and ordinary fitters could be replaced.

Under a proper system of universal training, every unmarried man should go out and fight before one married man left the country—except, of course, those married men who were anxious to escape from matrimonial trammels—and after them should go the married men with no families.

The whole evil of the voluntary system is that the best men volunteer first, and get killed first, and the wasters, who could best be spared as gun-fodder, stay at home and propagate their species, which would be better extinct. And this altogether apart from the fact that a few years of military discipline under the type of officer with which this country is blessed, would make a man of many a waster.

The most heart-breaking sight is the middle-aged reservist who has already fought through several wars, and now has had to leave a comfortable home and wife and children, and perhaps a little business which he has laboriously built up, to go out and be shot at while able-bodied youngsters, or unmarried men of his own age, stay at home, draw good money, and enjoy themselves.

As showing a different point of view the following extracts from a letter from a gentleman who omits to sign his name, are also of interest. Referring to the remarks in this paper, he says:—

"Does the writer mean to insinuate that the man who is working 16 to 18 hours a day from Monday to Friday is not entitled to a little recreation on a Saturday afternoon if he feels so inclined? Is the said workmen not entitled to spend that Saturday afternoon in what way he likes, let it be football, or cinema palace, or is that pleasure intended for men in uniform only?"

That is just exactly what the writer does mean. While Thomas Atkins, Esquire, has to "stick it" in a wet trench for ten days on end, and while he has to do so because there are insufficient men to relieve him, and while the despatch of men

to relieve him is delayed for lack of arms or uniforms, or while a military aviator has to fly a machine which is unsafe owing to excessive wear, or while an R.N.A.S., or R.F.C. mechanic has to work 24 hours at a stretch to keep machines fit to fly, owing to late deliveries of new machines on order, no employee in an armament firm can take any recreation with a clear conscience. Every minute he is away from work means a proportionate delay in delivering the stuff he is making.

The letter writer continues: "And does he think that a man who is employed in a factory, the walls of which are decorated with posters to the effect that every man employed in that factory is serving his country equally with the man who has joined His Majesty's forces is doing so? Personally I think, as do a lot more, that men so employed are entitled to some distinction from the man who has nothing better, and in a majority of cases does not want anything better to do than walk about the streets, or do an occasional odd job, but has never given one single thought to joining any of His Majesty's forces. When such men are gone then will be the time to criticise men who are staying at home although engaged in the manufacture of aeroplanes, guns, etc., which I suppose are a necessity."

Certainly the man who is a valuable worker is entitled to his badge, and so is the indifferent worker who is physically unfit to enlist, but the physically fit man who can be spared by his employer has no right to a badge and still less to rest and recreation.

The best specimen of a British workman I have come across yet was an elderly labourer employed on erecting some buildings for the Navy not far from Sheerness. Being a "prohibited area" the workmen were housed on the premises, and were in a tiny shed far too small for the number of men. One day a Post Captain, R.N. came to inspect the work, and in passing looked into the workmen's quarters, in which this old chap was doing some cooking. The Post Captain gave a look round, and a sniff, and said: "You've got a pretty fair pigstye to live in here, my man; haven't you?" "Yessir," came the reply, "and your brother, sir, and mine 'as got a damn sight worse quarters nor this to live in not seventy miles from 'ere, sir!"

That is the proper spirit for the Government worker who cannot go abroad. And yet one hears of threatened strikes, demands for days off, and so forth from men who are drawing more money than they ever dreamed of getting, and far more than they are ever likely to earn by the value of the work they do.

The grimmest jest in connection with the wearing of badges is the notion of the people at the Royal Aircraft Factory, whose futile designs and whose mistakes in drawings are hanging up deliveries at a time when every aeroplane is worth its weight in gold, swaggering about labelled with a patriotic motto, and pretending they are working for Fatherland and Faith, when the whole boiling of them is not worth the poorest specimen of a mudcrushing private who ever lugged a rifle through Continental slush. If anyone wants to see a full battalion of British democrats ripe for conscription let him or her go to South Farnborough when the alleged "workers" at the R.A.F. are rushing to their dinners. It is the only time they are ever known to hurry.—C. G. G.

Friendly Neutrals.

The following letter from five well known American aviators has been received by the Royal Aero Club:—

"The undersigned American aviators are sending you this little contribution (£7 16s.), and ask that with it you will buy cigarettes and forward them, with the best Christmas wishes of the American aviators, to the officers of the Royal Flying Corps who are now on service at the front."

(Signed) SAMUEL S. PIERCE, STEVE MACGORDON, JOHN D. COOPER, THOMAS L. BALDWIN, WALTER BROCK.

It was decided to divide this kind contribution between the Funds for the Royal Naval Air Service and the Royal Flying Corps, being administered by Mrs. Sueter and Lady Henderson respectively.

The "Britannia" Blériot

Mr. Alfred Docker, chairman of Wm. Coward and Co., Ltd., has kindly sent a picture of the "Britannia" monoplane gliding into the Auckland (New Zealand) Exhibition Grounds, piloted by Mr. J. J. Hammond. Readers will remember this machine being flown by Mr. Hamel from Dover to Cologne, under the auspices of the Imperial Air Fleet Committee, by whom it was ultimately presented to the New Zealand Government. Wm. Coward and Co., Ltd., patriotically gave the financial aid which made the Cologne flight possible.

Mr. Hammond has recently acquired a commission in the Royal Flying Corps.

Aeroplane Accidents.

The Paris Correspondent of the "Daily Telegraph" is responsible for the publication of the following somewhat curious article on aeroplane accidents:—

"In a conversation with one of the best known French aviators, a representative of the "Echo de Paris" learned the curious fact that the proportion of deaths from aeroplane accidents was, if anything, rather lower in time of war than in time of peace. The aviator explained the seeming paradox by pointing out that only the most experienced pilots are employed at the front, and that civilian aviators are forbidden to fly at all."

This, of course, is pure nonsense, for there are more civilians learning to fly, in the hopes of joining the flying services now than ever there were, and even in this country the various officers "on probation" are only civilian pupils learning to fly.

"Generally speaking," he continued, "when we fly over the enemy's line we run fewer risks than a sharpshooter who leaves his trenches. However, our job has become somewhat more dangerous during the last few weeks, for the Germans, whether it be that their shooting has improved or that they now possess a new aeroplane gun, are firing shrapnel which bursts at a height of 2,300 metres. In the early days their shells were ineffective beyond 1,800 metres. Now, at 2,300 metres we are too high to see clearly, so if we want to bring any useful information to our chiefs we must descend into the zone of fire. Even then our risks do not appear to be very serious, for a day or two ago I found on landing that my machine had been struck by no fewer than fifteen projectiles, but neither I nor my observer were a penny the worse for it."

Here again the pilot is talking rot. At the very beginning

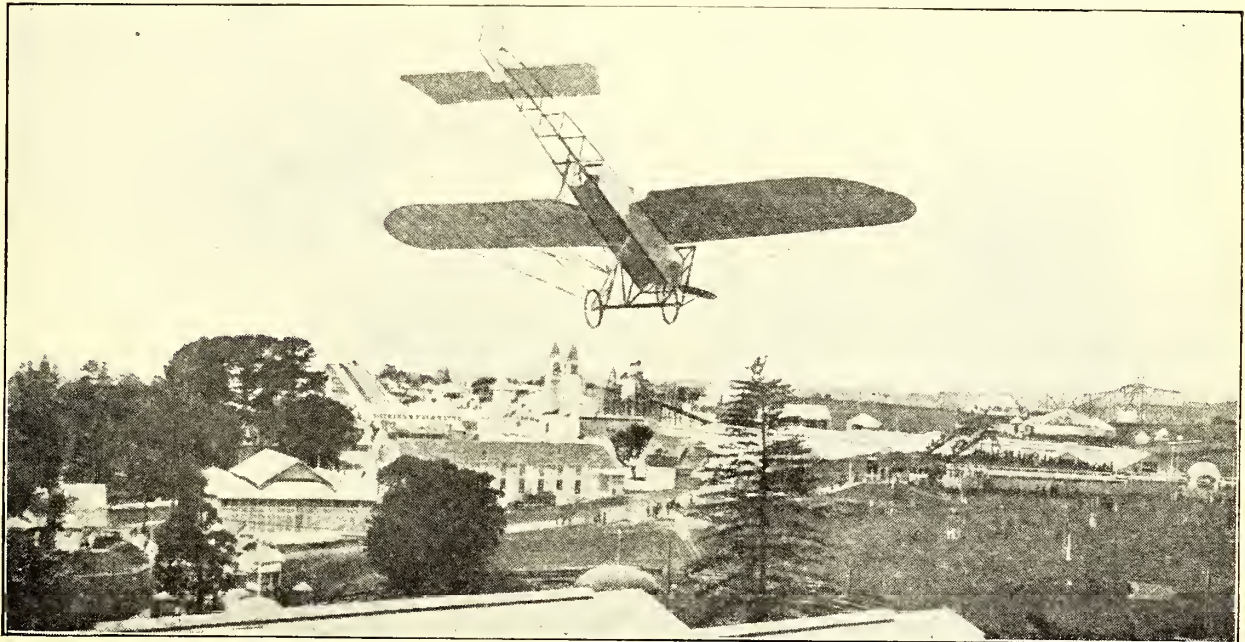
of the war it was stated in this paper that the German shells burst at over 3,000 metres, and that their extreme vertical range was over 5,000 metres. This was just what saved the aviators, for unless the Germans scored a direct hit, the shells burst far above the machines. Rifle and machine-gun fire is the real danger.

According to trustworthy statistics the German fifth arm has suffered much more severely than the French. Up to the present moment Germany is calculated to have lost seven Zeppelins and fifty-two aeroplanes, leaving her, according to the same statistician, with an air fleet of twenty-six dirigibles and 287 aeroplanes. Germany's air losses in men are reckoned at eighty-six. Except the death of Senator Raymond, the French have to deplore the loss of no famous aviator since the beginning of the war.

Like the rest of the article this is hopelessly inaccurate, and apparently this is the "Telegraph" man's own contribution. $26 + 7$ Zeppelins = 33. The old, old foolishness of calculating the available number of Zeppelins from the "series" number of the latest out. Seven destroyed is reasonable, so that there are now perhaps nine or ten in existence, some of them out of date and useless. The aeroplane figures are equally futile. The original number was nearer 1,500 than the 339 given by this person—the figure is a curious one and apparently makes no allowance for replacements during the war. If only 52 have been destroyed the German air fleet must be larger by some 500 machines than when it started the war, for the output of the whole German industry must be well over 40 machines a week.

The figure for the loss of German pilots is probably nearer the mark than any other figure in his list, but the remark on the French losses is absurd. None of the famous professional acrobats have gone, except M. Chevillard as a prisoner, and among the record-breakers M. Garaix of "Paul Schmitt" fame is missing, but the losses among the first-class French military aviators, who are much more valuable, have been very heavy. Probably a couple of dozen deaths would be a moderate estimate, taking flying accidents and deaths by shooting together.

As a matter of fact, judging by our own experiences, the number of aerodrome accidents to pupils is about in the usual proportion, with a tendency to decrease owing to improved machines and more experienced instructors. The minor accidents on active service, resulting in smashed machines or



AVIATION IN NEW ZEALAND.—The "Britannia" Blériot landing at Auckland, N.Z., last winter.

scratches and bruises, are far more numerous because the pilots have to fly in worse winds and over worse country. The deaths due to shooting while in the air are very few and far between, apparently only four officers in all, in two machines, and one of those was hit by "accident."

Fatal falls or serious accidents have been fewer, because the pilots have now had so much more experience, and because on active service they do not risk their lives by trying to save their machines. A good pilot can land almost anywhere if he resolves to wreck his machine and save himself and his passenger. Four officers in two machines have been lost at sea, but these losses might have occurred almost as probably in time of peace.

FROM DENMARK.

Once more it is possible to give some of Mr. Hildesheim's illuminating news of aviation from the neutral's point of view. In his own distinctive style he writes thus:—

"Flugsport," of October 11th, contains the following aerial notes of interest:—

The further casualty list of the Feldfliegertruppen: Oberlieutenant Stripper met with a fatal accident by Jamoigne; Oberlieut. Lonicer missing; Lieut. von Haine missing; Militiaman Engelen wounded; Sub-officer, in the reserve, Uhrig, wounded by hostile bomb-dropping; Lieut. Neubahr, hitherto missing, was killed; Lieut. Holtzmann, hitherto missing, has been taken prisoner; Lieut. Kleber, hitherto missing, has been taken prisoner; Sub-lieut. Finger killed; from the aviation station at Darmstadt he undertook on October 9th a patrol flight above the Argonner wood; on the return flight he was violently shot at and was hit by one bullet in the right lower arm, and by a second in the intestines. Though compelled to steer with the left hand thus only, Finger succeeded in reaching back to the German lines. Next day he received the Iron Cross, and shortly afterwards succumbed to his wounds.

The paper corrects the false news from the last copy that the well-known aviator, Lieut. Carganico should have been killed by the enemy, as he stays at Darmstadt and will be ready to commence his flights soon. Besides from active service the Feldfliegertruppen have had the following losses still. By Rathe now an aeroplane with two sub-officers from Doberitz fell, whereby the aviator was killed and the other severe wounded.

The Iron Cross for special glorious and keen flights have further received: Captains Genée and Wilberg; Oberlieuts. Niemoeller, Geyer, Palmer, Hans Steffen, Majensky, Sieber, Korn and von Osterth; Lieuts. Huttich, Sieb, Kuhn, Claes, Haesecke, Wegener, Behl, Kruger, Hans Hesse, Kastner, von Muhlglig-Hoffman, Pfeiffer, Kropp, Hermann, Domage and Lincke, Einjährig Freiwillig sub-officer Finger, sub-officer Kuppers, and the civilian aviators on his Majesty's service: Karl Kaspar, Werner Landmann, Bruno Steffen and Franz Steffen, and Lieut. in the reserve R. Michaelis, Director of the Brandenburgische (Etrich) Flugzeugwerke; while Oberlieut. Dietze and Bonde were awarded the Albrecht's Order, and Major Hiller, the commander of the Bavarian aviators' battalion, received the Red Eagle Cross, 4th class.

The Russian aviator Wasziljew was shot down in the fights by Lemberg and taken prisoner by the Austrians.

"Flugsport" tells in an article titled, "English dejections of Spirit" among others of the taken prisoner of "Colonel" Grey. The German ordnance brought an English aeroplane down by Peronne, two Bavarian soldiers took the aviator and the passenger prisoners, and the former turned out to be Colonel Grey, a brother of the oft-mentioned English Minister.

[Capt. Robin Grey, to whom the note refers, is a very distant relative to Sir Edward Grey.—Ed.]

There seems to be a quarrel among the German aviators who was the first to fly over Paris, at one time Lieutenant von Hildessen was told to have been, later the honour was for Sub-officer Werner in his fight with an English tractor biplane, and now the aviator Hermann Dressler claims to have paid Paris the first aerial visit in the war in the following report:—"On August 29th I was ordered to explore the hostile movements of the troops in the neighbourhood of and South to Amiens. To fly over the whole of that line I was compelled to

turn to South, and in looking at my map I happened to glance at Paris; till now no German shot had spoken there, and I carried two bombs in my aeroplane. I was fascinated by the thought and could not possible get rid of it. As I had to fly in the direction of Paris anyhow, it could be but a Western deviation of 30 kilometers. In twenty minutes the Eiffel tower popped out of the blue mist like a vision; my heart beat from joy, a foolhardy, victorious feeling almost confused me. And Paris lay already extended below me with her ocean of houses. Only not approach the Eiffel tower too much! I knew that machine and anti-balloon guns were placed on the upper platform. At big circles I flew round the dangerous, high building and was to my estimate amidst the French capital; I placed a bomb in the starting tube and let it go, seeing it drop leaving behind a dull burning comet's tail. That was the first bomb from the air on Paris!"

The well-known pilot of the Gotha dove monoplane, Ernst Schlegel, who made the longest flight but one and won the second prize, 60,000 mark in the "Flugspende" competition last year, has distinguished himself, first being awarded the Iron Cross and later being appointed a lieutenant. He has on military service stayed some days at his native city Konstanz, where he told his adventures during the war. On the second day of mobilization Schlegel had to appear in Hanover, where he was allotted the second army. At once patrol flights were started—above Belgium and especial to Liège. By this fortress Schlegel received his baptism of fire, and even from his own countrymen, from German troops, so that he was compelled to use himself of his lighting pistol, the token to the German troops that they have a German aeroplane above them.

[Rather a useful hint this.—Ed.]

The Late Captain F. H. Mahony.

The Committee of the Sussex Aero Club recently announced with regret the death of a highly esteemed member, Captain

F. H. Mahony, of the 1st Cheshire Regiment, which has done much good work. He was wounded on October 21st and died on the 22nd. He was a son of the late Captain F. H. Mahony, of the York and Lancaster Regiment. He rose from the ranks and was made Captain in 1906. He saw service in West Africa in 1900 to 1904, and was attached to the Army Service Corps during the South African War, and was present at Dreifontein, Johannesburg, Pretoria, Diamond Hill and Belfast, receiving the Queen's medal with five clasps.



Captain F. H. Mahony.

Before going to the front he was stationed at the Cheshire's depot, and Headquarters were anxious to retain him there for the training of recruits, but he volunteered for active service and left for France on September 21st. He was an Irishman from County Cork, and was very popular with officers and men, being a keen and brave soldier and possessing a fine sense of humour.

In his last letter home, dated October 17th, Capt. Mahony stated that the Cheshire's loss of officers was abnormal, and that he himself was practically in command. Their brigadier had on two occasions complimented the regiment. He leaves a wife and two children, aged 5½ and 3½ years, to whom the Committee desire to express their condolences on their great loss.

A Presentation.

Much excellent feeling was displayed at the Sunbeam Motor Works on Monday of last week, when a handsome silver tea and coffee service was presented, on behalf of directors, staff, and workpeople, to Mr. Thomas Cureton on his retirement from the post of managing director. Mr. W. M. Hiff presided, supported by Alderman John Marston, J.P. (chairman of the company), and Mr. L. Coatalen, the famous designer of the Sunbeam engines. Alderman Marston, in his speech, recalled that Mr. Cureton went to him in 1877 as a boy of 15, and had been with him ever since—a period of 37 years. Mr. Cureton intends in future to reside in the South of England, but one hopes he will not give up his interest in motors, for his was one of the first British firms to tackle the making of aero-engines, and it has done so with markedly good results.

How Not to Do It.

Raphael Tuck and Sons, Ltd., who always turn out excellent printing, lately sent for editorial notice a specimen of what is described as a "National Christmas Card." This, one gathers, is published and sold entirely for the benefit of the Prince of Wales' National Relief Fund.

The picture on the front contains a group representing most branches of the King's Services, and the publishers state that the design is illustrative of the vigour and manhood of the Imperial Forces upon which the safety of the realm depends. Unfortunately, the soldiers in the drawing have about as much vitality as a group of figures at Madame Tussaud's, and, presumably in order to give colour to the production, the soldiers are depicted in full review order, instead of in Service kit. A Boy Scout in the distance adds a touch of artistic verisimilitude.

In the background are sketches of warships, one of which strongly resembles an oil-tank steamer with masts, while overhead are sundry amorphous shapes which, the list at the end informs one, represent the Royal Flying Corps, and include "an airship, a hydroplane, and a monoplane." The fact that hydroplanes are not habitually used, either as weapons or vehicles, by the Royal Flying Corps apparently does not affect the question.

The whole picture recalls Dick Helder's drawing of the British soldier, as described by Mr. Kipling in "The Light That Failed," even down to the polish on their boots. It is about on a level artistically with the efforts of the Army Advertising Department, and nearly as unconvincing. One can only regret that such a good cause as the Prince of Wales' Fund should not

have had a better picture produced for its assistance, even though the printing be irreproachable.

Another New School.

The Ruffy School of Flying at Hendon is now well at work, and the method of working presents features of particular interest. It is the intention of the proprietor that pupils shall have really high-power machines to learn on, and the systems of dual control and individual control will both be used, so that pupils will have an opportunity of having their faults corrected by an instructor while actually in the air, and yet get accustomed to flying alone.

The school already possesses a 60-h.p. Gnome dual-control Caudron biplane and a 45-h.p. Anzani machine, and the firm is now erecting a 50-h.p. machine at its works at Portman Square. The brothers James who learnt to fly at the Ewen (now British Caudron) School have been engaged to assist Mr. Ruffy. One of them, it will be remembered, won the I.C.S. prize for the first pupil to take an aviator's certificate. It is the intention of the proprietor that there shall be not more than six pupils to a machine, and therefore new machines will be put into commission to keep pace with new pupils. The machine now in course of erection only took a month to build.

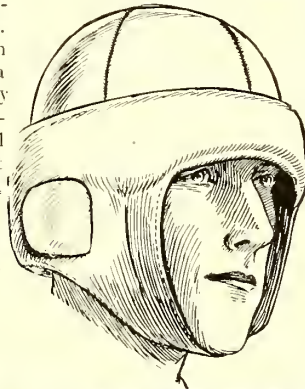
School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
South Coast...	Rain & Fog	Dull but Fine	Show'y	Dull Rain	Show'y	Show'y	Fine
East Coast ...	Wind & Rain	Show'y	Fair	Windy	Wind & Rain	Fine to Wet	Fine
Hendon ...	Rain	Rain	Fine	Fine to Rain	Rain	Rain	Fine

Eastbourne.—At E.A.C. SCHOOL: Instructors: Messrs. F. B. Fowler and R. C. Hardstaff. Pupils with instr.: Flt. Sub-Lieuts. Pullin, Barnes, Gerrard, Openshaw, Sibley, Travers, Teesdale, Brisley, Wood and Bailey. Machines: E.A.C. propeller biplanes.

Hendon.—At THE GRAHAME-WHITE SCHOOL: Instructors: Messrs. Manton, Shepherd, Russell and Winter. Pupils, with instr.: Prob. Flt. Sub-Lieuts. Dalison, Mills, and Walmsley. Strts. alone: Prob. Flt. Sub-Lieuts. Driscoll, Dalison and Mills. Prob. Flt. Sub-Lieuts. Barnes, Breese, Cooper, Livock, Wakeley, Watson, Field, Watson, Young, Driscoll, Dalison, and Mr. Greenwood half-circuits. Certificates taken: Prob. Flt. Sub-Lieuts. Field, Cooper, Wakeley, Watson and Breese. Machines: Grahame-White propeller biplanes.

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SCHOOL.—Instructors: Messrs. Warren and Smiles. Strts. or rolls alone: Messrs. Moore, Abel, England, Denvin, and Laidler. Machines: L. and P. biplanes.

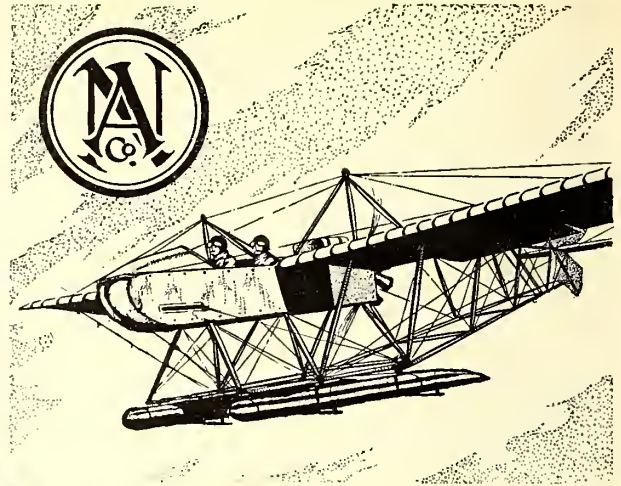
AT THE HALL FLYING SCHOOL.—Instructor: Mr. J. Rose. Pupils: Mr. Lloyd Williams (10 strts. flights), Mr. Waterson (8), Mr. W. J. M. Connochie (14). Mr. J. Rose flew 10 circles on No. 3 tractor. Machines: Hall tractor biplanes.

AT RUFFY SCHOOL.—Instructors: Messrs. Herbert James and Howard James. Pupils: Messrs. Aoyang, Graham, Donald, Marriott, Lacroust. Machines: 60-h.p. Gnome Caudron (dual control), and 45-h.p. Anzani single-seater.

A new 50-h.p. machine is being erected at the works and will be in use in a few days.

AT THE BEATTY SCHOOL.—Instructors: Messrs. Geo. W. Beatty, E. Baumann, and W. Roche-Kelly. Pupils with instr.: Messrs. G. Virgilio (35 mins.), M. L. Gardner (41), C. Leeston-Smith (26), J. D. Newberry (10), Anstey Chave (24), Cornish (33), G. Merton (33), G. Beard (49), G. Donald (26), G. Perrot (26), Roche (22), B. de Meza (16), Miller (30), Lieut. Bannatyne (6), and Ormsby (21). Certificates taken: Messrs. M. L. Gardner and G. Virgilio passed tests. Machines: 40-h.p. Wright and 50-h.p. Gnome biplanes, with "dual" control.

WINDERMERE.—AT NORTHERN AIRCRAFT CO.: Bad weather interfered with operations at Bowness during the early part of the week, but the pupils received illustrated lectures as usual and made themselves familiar with the work's routine. On Friday Instructor Bland went out on two occasions with a pupil (Mr. Lashmar), but the wind was too high and the machine was nearly blown over, the crew saving the situation by climbing on to the windward side of the machine. Some excitement was caused by the company's motor launch "Sarah," which "buck-jumped" a submerged rock as it dashed to the rescue, but little damage was done. Saturday was a better day and Chief Instructor Rowland Ding gave long lessons on the pusher monoplane to Messrs. Lashmar and Railton, the pupils taking full and partial control. Mr. Ross, a prospective pupil, received his initial flight.



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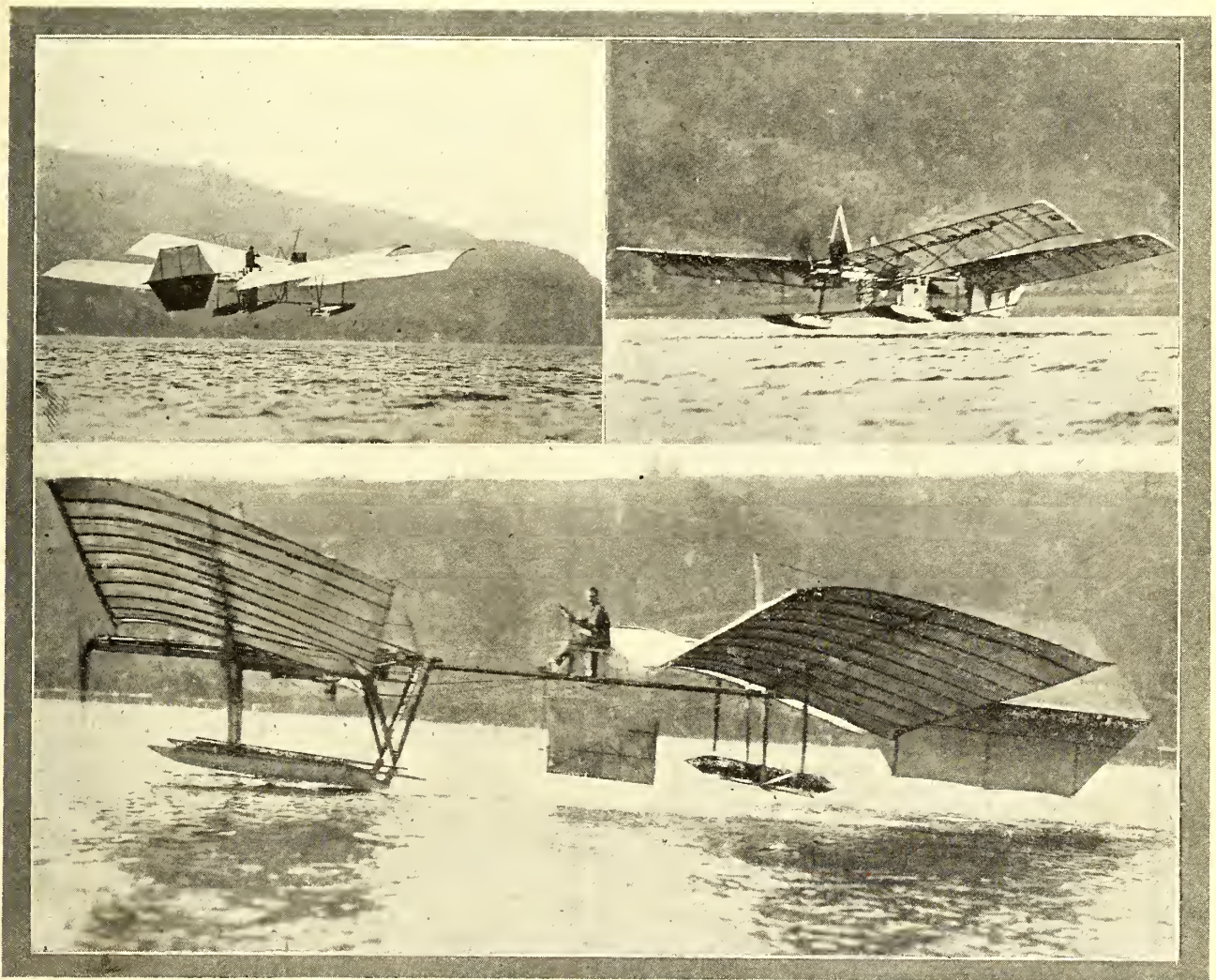
Edited by C. G. GREY. ("Aero-Amateur")

VOL. VII. [REGISTERED AT THE G.P.O.
AS A NEWSPAPER.]

WEDNESDAY, DECEMBER 30, 1914.

No. 27

YE OLDE TIMES.



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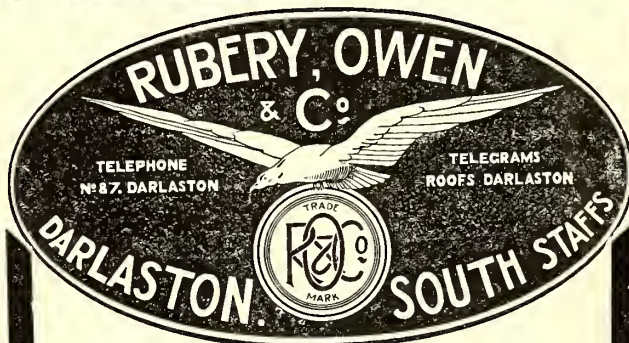
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A MERRY CHRISTMAS.

On Christmas Eve and on Christmas Day, for the first time since General Hoche landed a small force in the County Cork in 1798, militant enemies have manoeuvred over the land of the British Isles, and one hopes that this fact will bring the realities of war a trifle closer to the average inhabitant of this country than anything else has done so far. Doctors and nurses tell one of the terrible state in which the wounded arrive in hospital, but the average person only sees the wounded as rather interesting invalids in becoming blue suits, or in uniform, with nice clean white bandages. Even the bombardment of the Hartlepoons, Scarborough, and Whitby was carried out at a distance, and the enemy's men were not actually over British soil.

The "single spies" who visited Dover and Erith by aeroplane may well be but the forerunners of "whole battalions," and it is to be hoped that the Anti-Aircraft Defence Corps is ready to deal with them. Doubtless against Zeppelins 500 feet long and 45 feet or so deep, the ordinary high-angle gun could make useful practice, but when, as in the case of an aeroplane, the 500-foot length is reduced to about 25 feet and the span to about 40 feet, one has not the same belief in aerial gunnery, and one feels more inclined to rely on armed aircraft for defence.

It seems, therefore, that the authorities should choose definitely between the two and provide accordingly. Both means of defence ought not to be used together, for by the time one of our pilots gets near enough to an enemy aeroplane to hit it he is more than likely to be hit by one of our own anti-aircraft guns.

One is told that when the Christmas raider came up the Thames, he was chased by, among others, a Naval officer on the Albatros biplane which the Navy bought just before the war, and that the high-angle guns got much nearer to him than to the German. It would be rating the intelligence of the Anti-Aircraft Corps much too highly to assume that they fired at his machine on purpose because they recognised it as a German, for 99.9 per cent. of them probably do not know a Bleriot from a bumble-bee or a Sopwith from a skylark at 4,000 feet or so. Therefore it appears that the pursuers are in greater danger from the Anti-Aircraft people than are the pursued, and definite orders should be given that no guns on the ground are to be used if aeroplanes are seen in pursuit of another.

Also, one would suggest that a proper system of air patrols should be arranged, and that gun-carrying machines should be stationed at certain points, always ready to start, with pilot and gunner standing by for so many hours a day, and with the engine continually warmed up by being run for a few minutes every quarter of an hour. Further, these machines should be faster than the best German machines which are likely to come over. It is sheer folly to let sporting young officers go up on 70-h.p. or 80-h.p. "pushers" which do about 66 or 67 miles an hour, or on B.E.2c's, which are slower still, to chase a 100-h.p. Aviatik which does about 75 to 80 m.p.hr.

This is not a job on which one can "muddle through" with success.

With faster pursuers, neither of our Christmas visitors would have got away. They obviously came over simply as scouts to draw our fire and see how well we were prepared to meet them. They must have gone back with a pretty poor opinion of our preparations.

Perhaps that may have been a wily piece of business on our part, simply to entice many others to pay us a visit so that we may capture the lot. Perhaps not. However, let us hope that before the visit in force is paid, we may be thoroughly equipped to meet it.

In any case, one hopes the people with the popguns on the ground will be told not to play with their dangerous toys till they see a real Zeppelin. The German anti-aircraft gunners have had much more practice than they have had, and yet they never hit one of our aeroplanes, so our gunners are still less likely to hit a German, and the further they get from the German the more likely they are to hit his pursuers. And, though the great majority of them are likely to fire at the wrong machine anyhow, there is always the chance that they may hit No. 4 pursuer when aiming at No. 1.

The Cuxhaven Affair.

The attack on Cuxhaven was, as a contrast, an outstanding example of organisation. The aeroplanes were a neat, homogeneous squadron of Shorts, just as the Friedrichshafen pilots were all on Aviatiks, and the Dusseldorf lot on Sopwiths. The incident brings into prominence the real Naval Air Service which goes down to the sea in ships, without paeans of praise in the popular Press. In fact, the little flotilla of seaplane carriers has hitherto been practically unknown outside the Navy List. Visitors to France before the war knew the "Engadine," "Riviera," and "Empress" as fast boats plying between Folkestone and Boulogne, but few knew the speed which could be whacked out of them by Naval engineers. Fewer still know of the work done by these boats and their seaplanes during the past three or four months, and the time has not yet come to tell it in detail.

One may, however, indicate that Squadron-Commander L'Estrange Malone, R.N., one of our cleverest and most experienced Naval pilots, commands the "Engadine," and that his navigating officer is Lieut. Erskine Childers, R.N.V.R.—to whom the sea and land from Holland to Denmark, and the Kiel Canal itself, is an open book, as shown in his great work, "The Riddle of the Sands." Also that Flight-Commander E. D. Robertson, R.N., an aviator and a skilful gunnery officer who has made a study of bombs, commands the "Riviera." Also that Flight-Commander Bowhill, R.N., an experienced pilot, commands the "Empress." They have with them many of the best pilots in the Naval Air Service, and nearly all of them are Naval officers of the best Navy Type, which is a somewhat important detail when officers have to live together on a small ship.

One may assume from its success and the manner of its execution that the raid was not hurriedly planned, nor carelessly arranged, and one may expect

with confidence that the same organisation will be responsible for more work of the same kind. In which case one wishes them every success. They cer-

tainly had a Merry Christmas; may they have an equally Prosperous New Year, full of adventure and honour to the Royal Naval Air Service.—C. G. G.

Some Practical Points for Consideration—(Continued).

Eyeableness.

On the score of "eyeableness" it might appear that huge camber and big chord with a short span would have no chance of success, but one has now become so accustomed to the look of the little stumpy "tabloid" type that a really big machine built on similar lines would not offend the eye. A forty-foot span with a ten-foot chord would look just the same as a tabloid when fairly high up, and reduction of span has very many advantages.

To begin with, it simplifies construction very much, for it decreases the amount of girder work both for lift and head-resistance. Also, increased camber and chord mean bigger spars, and an enormously increased factor of safety. Also, a short span machine is easier to house on the ground, and harder to hit in the air. To which one may add that the big spars would stand perforation by bullets much better than small ones.

One trembles to think of what would happen to the spars of some machines if hit in the right way. The main spars of the new B.E.2c's, for example, are horrifying enough in their original state, and there is certainly no margin for bullet-holes. They may be all right on paper, but one cannot help feeling a nasty suspicion that one of the "x" chasers has left out some important step in the calculations, as they apparently did in the B.E.8. At any rate, there is quite as much timber in the cross section of one interplane strut as there is in that of a main spar, which is a consoling thought for the officers who have to fly them.

What is "Loading"?

This question of cambers really needs a heap more investigating. For instance, people talk glibly of the loading per square foot of a certain machine, and the amount of strain fabric will stand with safety, but they are apt to forget that the strain on the fabric may vary from nothing to almost anything on the same wing, according to the shape of the upper surface. The strain on the lower surface is practically negligible, because the pressure is, all the time, forcing the fabric up against the ribs, and anyhow the variation is small. The upper surface, however, is another story, for the strain varies all the way from a terrific downward pressure on the top of the leading edge to a powerful upward suck just aft of the maximum camber—it is, of course, this upward suck which does most of the lifting—and the amount and position of the maximum suction varies momentarily as the machine pitches or as gusts rise and die away, or perhaps one should say, as the machine charges into gusts and leaves them behind.

The effects of camber are shown most interestingly in the double camber of the Wight machines, patented by Mr. Howard Wright. In these there seems to be a distinct limit to the chord for the present camber, and, which is perhaps even more peculiar, the efficiency of this type of plane is badly decreased if it is made with three corrugations instead of two.

It seems possible that the inventor may have struck just the right camber for his present chord, and any alteration of either may decrease efficiency. It would therefore be interesting to see the effect in a plane of this type of preserving exactly the same relations between camber and chord, and increasing both by about fifty per cent. without increasing the span. It might not give fifty per cent. increase in lift, because the ratio of camber to chord may not increase directly, but it seems worth trying.

After which it might be possible to evolve a correct ratio for triple or quadruple camber, and if that works

there seems no reason why the top of a plane should not have a surface like a corrugated iron roof. Of course, there must be a limit to the number of corrugations, just as there must be a limit to the chord of a plane, in relation to the span, but one would like to know what that limit is.

Suction Lift.

Apropos the lift by suction given by the top surface of a plane, people as a rule—especially new-comers to aviation—do not realise quite how large a part this plays in the flying of a machine. It is one of the reasons why a biplane, especially one with long extensions, lifts better than an ordinary monoplane; for the huge uppermost surface of the biplane is uninterrupted and so has a full lift, whereas a monoplane has the upper cabane and all the upper wires to the wings which cut up and deflect the air currents.

The "parasol" type monoplane has, of course, much the advantage of the biplane, but it wastes some of its possibilities for wing fixings and so loses lifting power without reducing head resistance materially. It is, in fact, a tractor biplane in which the lower planes are sacrificed so as to give a perfectly clear view below. Whether the sacrifice is justified does not appear to be decided unanimously by those who have tried both types.

Interference with Air Streams.

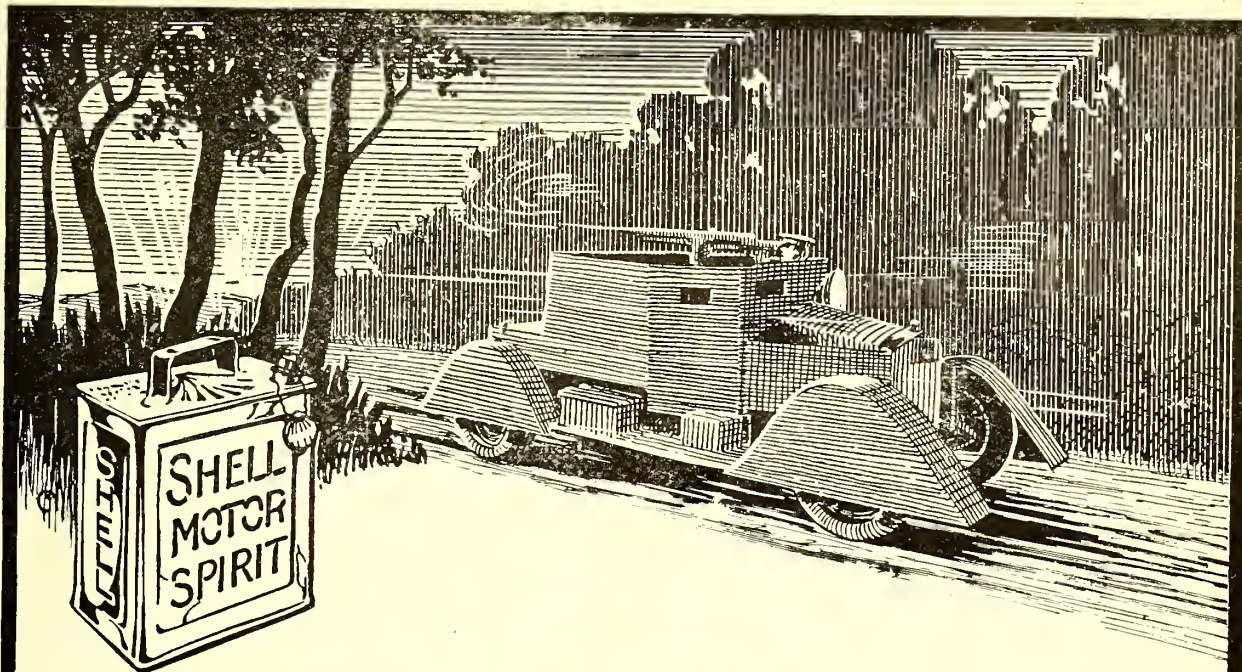
Interference with the air streams over the upper surfaces of planes was curiously illustrated on a couple of the early Wight machines. These were built to the original design, which has since been modified, and it was thought that the rear spars were too light. In order to strengthen them, so that the wings could be used with safety while others were being built, tiny king-posts were fitted at intervals along the rear spars and were braced with piano wire. Now the rear spar represents the second camber of these planes, and the bracing along the top of the camber reduced the suction lift along it so appreciably that not only did it reduce the total lift of the planes, but it put the greater part of the lift onto the front camber, with the result that the centre of pressure was pushed farther forward and the machine became tail-heavy, instead of being in neutral balance. Consequently the tail had to be set up in front to give quite a decided lift, which, of course, affected the longitudinal stability of the whole machine deleteriously, and incidentally slowed its flying speed considerably.

In the later machines all this has been put right, and one gathers that they are as nearly inherently stable as no matter—at any rate, the Naval pilots seem highly pleased with them, and they lift enormous weights with more than their former ease, so all is well. But the effect of a few feet of wire and of a few king-posts only a few inches in height is distinctly worthy of note.

Double Camber.

As to why the double camber is so efficient, it is hard to explain simply. There is an old proverb to the effect that "One cannot grind a mill with the water that has passed," but there is no reason why the water which has turned one mill should not turn another placed farther down-stream. Apparently that is what happens in this case. The air strikes the leading camber, bounces upward and gives a suction lift, comes down again on the downward slope of the leading camber, strikes the second "hump" and gives a second lift there.

Another theorist insists that one would get just as good an effect by filling in the "dip" between the two cambers and giving the air a flat surface to run



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across to the dip behind the second hump. His idea is that the air is deflected upwards by the leading camber to a certain extent, and then flows straight back. If one carries the natural curve right over from the leading edge to the trailing edge, the single camber resulting is too high, so that by carving off the top one reduces the head-resistance of the whole plane and so makes it more efficient. Of the two, the former explanation seems the more plausible, and quite probably both are absolutely wrong.

Anyhow, the fact remains that the double camber does give an extraordinary amount of lift through a wider range of angles of attack than any other type of plane. It is apparently possible to make a single camber plane give a bigger actual lift, but such a plane is only efficient within a limited range of upward tilt, whereas tests show that the double camber type gives a much wider range.

Streamlines Generally.

All these questions of the flow of air need much more practical test, for apparently no one knows what really does happen. One thing, however, seems fairly certain—namely, that whether the streamline shape under consideration is a wing curve, or a fuselage, or a chassis strut, or a propeller blade, there is only one shape which is really efficient at a given speed. Any other shape must mean a loss somewhere.

Formerly we were told that the ideal streamline shape was a hemisphere followed by a cone of which the height from base to apex was equal to the diameter of the hemisphere. Such a fixed law would be very nice and simple, but apparently such a shape is only true for a speed of about 20 miles an hour. And, incidentally, the true streamline for any one speed is only correct for air at one particular temperature, at one state of moisture, and at one degree of pressure, which complicates the search for absolute truth.

However, it seems clear that the higher the speed the more slim and tapering aft the form must be, though the leading edge—or the nose—may remain blunt. The worst streamline form possible is a bullet, with its pointed nose and flat stern. If one could fire it base first, and do away with the spin which is now necessary to make it travel straight, probably its range would be doubled. A bullet is only shaped as it is because of the difficulty of launching it in any other way, and the suction of the air behind the flat base is a constant brake on its progress from the time it leaves the muzzle of the rifle. It is this suction which causes the "ping" of a bullet through the air, and in a big shell the noise becomes a shriek.

"Pusher" Nacelles.

It is because of the flat end to the fuselage, added, of course, to the resistance of tail-booms, wires, and so forth, that a "pusher" machine is always so much slower than a tractor. Curiously enough, no one has ever seriously set about streamlining pusher nacelles—or bodies—though the little that has been done lately in this direction on the "shorthorn" Maurice Farman's, together with careful streamlining of chassis and interplane struts, has put their speed up to over 70 miles an hour, which is practically as good as a B.E. and better than the Henri. This merely indicates what could be done by careful streamlining on a twin-screw pusher with a fuselage.

It would not be at all surprising to find that a pusher could be made faster than a tractor, for apparently an air-screw does not much mind catching hold of air that has already been disturbed by the planes and struts, chewing it up, straightening it out, and pushing itself and the machine forward against it, whereas it does very much object to taking "clean" air and pushing it back against a flat cowl and the leading edges of the planes.

Body Streamlines and Propellers.

This effect of streamlines off bodywork onto propellers is another subject which requires deep study, for no one knows what really happens. Marine engineers are equally at sea—literally and figuratively—on the same subject. They may have come to some definite conclusion lately, but I am told that, when the "Mauretania" was a new ship, the makers kept on fitting her with new propellers after almost every voyage across the Atlantic, in the endeavour to get greater efficiency for the fuel consumed. Some of these propellers, one heard, though themselves perfectly balanced, caused the most terrible vibration, which was ascribed by some people to syntonistic vibration, and by others to cavitation in the water causing a bump against the ship's bottom.

If marine engineers working in a visible, incompressible, non-viscous, and inelastic medium have not evolved in a hundred years or so an exact science which will allow them to design the perfect propeller exactly suitable for the streamlines resulting from any given shape of hull, there is little cause for surprise that the designers of aeroplane propellers, working in a medium which is invisible, compressible to any extent, the most elastic substance known, and rather "stickier" than treacle, should not yet understand just what is the right thing for any given aeroplane. This is especially so when one considers that the only people who have money to spend on practical experiments are of that peculiar half-baked type of "intellectual" who seem to be gathered in flocks by civilian government establishments, and who depend on ill-digested science for their results long after ordinary rule-of-thumb mechanics have already got far ahead of them by the use of plain common sense.

A Universal Provider.

One of the greatest curiosities in propeller effects that has so far been discovered was an old air-screw which belonged to the Vickers School at Brooklands some years ago. It was used on 50-h.p. box-kites, and 80-h.p. box-kites with Gnomes, on a 70-h.p. tractor monoplane with a R.E.P. engine, and on another monoplane with a Viale radial engine which gave about 60 h.p., and it flew all those machines better than any other propeller, though dozens of others were tried. I believe copies of it were made, but none of them were quite so good. Just why it happened to fit in with the particular streamlines off the bodies and tanks of the pushers, and with the cowls of the tractors, no one ever discovered. Its edges were chipped and it looked generally disreputable, but it still did its work till some unhappy pupil managed to smash it utterly, and very nearly suffered the same fate himself at the hands of the irate school.

Anchoring in a Wind.

Writing of smashes and wind effects reminds one that in a letter from an officer on active service, published recently in one of the daily papers, it was stated that in the big gale a few weeks ago several of the R.F.C. machines anchored out in the open were blown over and smashed. This matter of anchoring out, or pegging down, is one which deserves more attention than it seems to get. Opinions seem to be divided as to whether, if there is no shelter available, machines should be placed head to wind or not. If a machine is placed tail to wind, the wind tends to force it down onto the ground, which is so much to the good. But, if the wings have ailerons, the wind is likely to break them off, it will probably smash the rudder and elevator, and it may break down the extensions of big-span machines like the Henri Farman, or it may smash the trailing edges of wings like the B.E., which has a delicate wooden edging.

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If turned head to wind, a machine with big surface will pull any possible peg out of the ground, even the screw pegs—invented in Germany—similar to those used for the R.A.F. tents.

It has been suggested that the best dodge is to anchor them head to wind and place a motor-car in front of each, broadside onto the wind, to act as a wind-breaker. Motor-lorries or motor-busses are, of course, better still, and wherever there are aeroplanes, or troops of any kind, there are always plenty of cars available. If the wind is really fierce, even an ordinary open touring car with an open body will deflect the wind sufficiently to take a great deal of the strain off the machine, and a line of motor-busses drawn up close together would save a whole fleet of aeroplanes, for, if the front row of machines can be sheltered, they themselves will shelter another row drawn up close behind them.

An Engine Problem.

Finally, here is another little point for consideration. A few days ago I was told of a new Renault engine which had been sent abroad—not to the R.F.C.—for use on a B.E. When it was fitted, as my informant put it, “according to the picture on the lid of the box,” it refused to do any trade. It ran all right, but it refused to give any power, and it got very hot. Then a smart youth came along who knew quite a lot about air-cooled engines, from motor-cycle experience, and argued that the engine was originally intended for a pusher biplane with proper fan-cooling from the front end, which would keep the front cylinders cool, and the back cylinders would run hotter. Consequently, if the makers knew anything about engines, they would give the back pistons in the No. 4 cylinders more clearance. He further argued that, when the engine was used with a tractor and run the wrong way round, the original No. 4 cylinders would keep cool and would let gas leak through into

the crank-case, and the No. 1 cylinders would run hot and tend to stick up.

He was allowed to have his way, so he swapped over the No. 1 cylinders and pistons to No. 4, and No. 4 to No. 1, also No. 2 to No. 3, and vice-versa, so that the pistons and cylinders were all travelling in the order they would have been in if the engine had originally been put into a pusher. Whether he was right or wrong I do not profess to know, but in any case the machine flew as well as it did when new.

One man to whom I put the case simply said that the engine had probably been taken to pieces in the Royal Aircraft Factory—as all Government engines are, or have been until recently—and had been put together wrong, “as usual.” It has long been an accepted part of the R.F.C. routine for the mechanics to take engines to pieces and put them together properly after the R.A.F. have been fiddling with them, not to mention taking out loose screws and things that never belonged to the engines at all. This may have been changed lately, but I know that several squadron commanders would never allow engines which had come from the Factory to be used till their own men had taken them to pieces first. Possibly, therefore, this may be the explanation, and the engine might have been all right if left alone at first.

On the other hand, the engine may have come straight from the Renault firm, and this youth may have struck just the reason why the R.A.F. do take Renaults to pieces, though in a simple and comparatively roughly made engine like the Renault one would scarcely expect to find such refinements as different piston clearances.

Apparently many of our Service pilots have never heard of such a notion, so it may be well for them to get official information on the subject, considering that their lives depend on the good behaviour of their engines.—C. G. G.

The R.N.A.S. Comforts Fund.

Once more one can report good progress for the week. Mrs. Sueter points out, however, that the garments most rarely sent are cardigans, jerseys, and warm undergarments. Mufflers, etc., come in plenty. A consignment of comforts for fifty men at the Gosport Air Station have been sent this week.

At the suggestion of several Naval Officers, a gramophone and records were sent to each of the Royal Naval Air Stations, and two to the base on the Continent. The Hon. Mrs. Morgan has kindly sent eight geese to the Northern Air Stations, and Mrs. Warren Vernon 5,000 cigarettes to the R.N.A.S. base in France. Squadron Commander John Porte, R.N., O.C. Hendon Air Station, writes:—“Goods arrived safely, and are much appreciated at R.N. Air Station, Hendon.” Garments were sent to equip fifty men there.

The following cash contributions have been received:—Thos. Firth and Sons, Ltd., £26 5s.; Sir George S. Murray, £10; the Hon. Maurice Egerton, £10; Sopwith Aviation Co., Ltd. (3rd contribution), £7 os. 8d.; Hewlett and Blondeau, Ltd. (staff), £5 5s.; Commander Mansfield Cumming, R.N., £5; Flight Lieut. Sydney Pickles, R.N.A.S., £5; Five Armoured Car “Aviators,” £3 18s.; Mr. Edmund Burke, £3; Miss Dodge (per Dr. Sunderland), £2 18s.; Mr. Bernard Isaac, £2 2s.; Mr. A. R. Bosman, £2 2s.; Mrs. Delmar Morgan, £2 2s.; Miss G. Ogle, £2; Commander W. Portman, R.N. (ret.), £2; Chief Petty Officer Potter (for Lambeth Bridge Anti-Aircraft Company), £1 14s.; Mr. J. N. Hatch, £1 1s.; Admiral R. Tuffer, R.N., £1; Vickers Aero Mechanics, Erith (12th contribution), 12s.; Mrs. R. Mitford, 10s.; Miss G. Davison, 10s.; Mrs. Sparke, 10s.; Miss P. Conybeare, 5s.; Miss Goodman, 5s.; Miss Thorne, 5s.; Mr. and Mrs. Newcomb, 5s.; Miss N. Nicholson, 5s.; Mr. E. M. Toynbee, 5s.; “J. and S.,” 3s.; Anon, 2s. 6d.; Miss E. Walker, 2s. 6d.; Mr. G. Attwood, 2s. 6d.; Anon, 1s.; total for week, £96 11s. 2d.; grand total to date, £572 3s. 9d.

Keep the Pieces.

The Officer Commanding the Portsmouth Defences has issued instructions that in the event of bombs being dropped

in the district by enemy aircraft, the War Office desire to obtain some idea as to the size and nature of the missiles, and it is requested that in such an event any fragments collected should be handed to the police for transmission to the local military headquarters. The authorities, however, point out that this notice is merely a measure of military precaution, and they do not expect any such attack.

The Order of Troglodytes.

The following announcement was made on December 28th:—The Naval and Military authorities call the attention of persons using the streets to the danger from fragments of shell and from bullets from the guns used against hostile aircraft attempting a raid on London. The civil population are warned to keep under cover, preferably in basements, upon hearing the sound of firing by guns or of explosives.

The Lament of the Lady Passenger.

[“The Brooklands Aerodrome is closed to the public, having been taken over by the Military Authorities.”]

Ah, me! Ah, me! A stricken peri I,
Debarred the joys of Paradise, I lie
Prone on the earth, with sobs my bosom heaves,
I wail my lot, my cry the welkin cleaves.
No use to beat against that portal frowning,
Locked is that door, its gruesome aspect crowning
My state of woe. Alas! 'tis not for me
To scale those azure heights, nor yet to see
Those wings outstretched that bore me from your sight
Unto that seventh heaven of delight,
Where all my joys are centred, all my dreams
Lie basking in cerulean solar beams.
But Conscience whispers, “Is it time to dwell
And gloat o'er pleasures that the heart loves well?
Think of the brave, on battlefield, in trench,
Away with joy, with sorrow you should drench
Your garments in the brine of flooding tears.” . . .
So, with this blissful thought I calm my fears,
When war is o'er, body and spirit free,
Once more I'll soar aloft. Ah, me! Ah, me!

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GREAT BRITAIN.

From the "London Gazette." December 22nd, 1914.

WAR OFFICE, December 22nd.

REGULAR FORCES.—The undermentioned to be second lieutenant for service in the Field:—

The Hampshire Regiment.—First-class Air Mechanic William Henry Day, from Royal Flying Corps. Dated November 18th, 1914.

ESTABLISHMENTS.—Royal Flying Corps (Military Wing).—The undermentioned flying officers to be flight commanders. Dated December 11th, 1914: Lieutenant Henry Le M. Brock, the Royal Warwickshire Regiment, and to be temporary captain. Lieutenant Hyacinth J. A. Roche, the Royal Munster Fusiliers, and to be temporary captain. Lieutenant Lord George Wellesley, Grenadier Guards, and to be temporary captain; and Captain John F. A. Kane, the Devonshire Regiment.

SUPPLEMENTARY TO REGULAR UNITS OR CORPS.—Royal Flying Corps (Military Wing).—The undermentioned second lieutenants to be lieutenants. Dated December 1st, 1914: Norman C. Spratt and Gilbert B. Rickards.

* * *

A Second Supplement to the "London Gazette" of December 22nd, published on December 23rd, contains the following military appointments:—

WAR OFFICE, December 23rd.

SPECIAL RESERVE OF OFFICERS.—Supplementary to Regular Units or Corps.—Royal Flying Corps (Military Wing).—

Second Lieutenant Samuel P. Cockerell is confirmed in his rank.

The undermentioned to be second lieutenants (on probation). Dated December 14th, 1914: Edward Stanley Skipper and Alfred Huggins.

* * *

A third Supplement to the "London Gazette" of December 22nd, published on December 24th, contains the following military appointments:

WAR OFFICE, December 24th.

REGULAR FORCES.—Establishments.—Royal Flying Corps (Military Wing).—The undermentioned appointments are made:—

Flying Officers—Dated August 5th, 1914: Major L. B. Boyd-Moss, the South Staffordshire Regiment; Captain H. C. MacDonnell, the Royal Irish Regiment, and to be seconded; Captain R. A. Boger, Royal Engineers; Captain H. C. T. Dowding, Royal Artillery, and to be seconded; Captain E. F. Unwin, the Army Service Corps; Captain S. C. W. Smith, 3rd Battalion the East Surrey Regiment, and to be seconded; Lieutenant C. H. Marks, Reserve of Officers; Lieutenant R. C. H. Bewes, the King's (Liverpool Regiment), and to be seconded; Lieutenant D. C. Ware, Special Reserve; Lieutenant G. de Havilland, Special Reserve; Lieutenant G. B. Rickards, Special Reserve (honorary captain in Army); Second Lieutenant C. G. Bell, Special Reserve; Second Lieutenant R. R. Smith-Barry, Special Reserve; Second Lieutenant L. S. Metford, Special Reserve; Second Lieutenant N. C. Spratt, Special Reserve; Second Lieutenant V. A. Barrington-Kennett, Special Reserve; and Second Lieutenant A. Payze, Special Reserve. Second Lieutenant F. P. Adams, Special Reserve. Dated August 12th, 1914. Second Lieutenant Archibald G. Weir, Special Reserve. Dated November 19th, 1914. Second Lieutenant Hereward de Havilland, Special Reserve. Dated December 1st, 1914.

The undermentioned temporary appointments are made: Flying Officers—Dated November 19th, 1914: Lieutenant Eric M. Murray, Queen Victoria's Own Corps of Guides (Frontier Force) (Lumsden's), Indian Army, and Lieutenant Latham V. S. Blacker, Queen Victoria's Own Corps of Guides (Frontier Force) (Lumsden's), Indian Army.

NAVAL.

The following appointments were made at the Admiralty on December 28th:—

ROYAL NAVAL AIR SERVICE.—Acting Flight Lieutenants—C. W. H. Pulford and D. Harries, to the "Pembroke III," for course of training, to date December 20th.

Probationary Flight Sub-Lieutenants—R. E. Nicoll, confirmed in rank, with seniority September 7th, and appointed to the "Pembroke III," A. S. Maskell, confirmed in rank, with seniority October 12th, and appointed to the "Pembroke III," D. K. Johnston, confirmed in rank, with seniority September 11th, and appointed to the "Pembroke III," all for Royal Naval Air Service, to date December 23rd.

Assistant Paymaster F. K. Haskins, to the "Pembroke III," as flight lieutenant, with seniority October 3rd, for Royal Naval Air Service, to date December 23rd.

Mr. R. Souray entered as probationary flight sub-lieutenant and appointed to the "Pembroke III," for Royal Naval Air Service, to date December 28th.

* * *

The Secretary of the Admiralty makes the following announcement:—

On Friday, the 25th inst., German warships lying in Schillig Roads, off Cuxhaven, were attacked by seven naval seaplanes piloted by the following officers:—

Flight Commander Douglas A. Oliver, R.N.

Flight Commander Francis E. T. Hewlett, R.N.

Flight Commander Robert P. Ross, R.N.

Flight Commander Cecil F. Kilner, R.N.

Flight Lieutenant Arnold J. Miley, R.N.

Flight Lieutenant Charles H. K. Edmonds, R.N.

Flight Sub-Lieutenant Vivian Gaskell Blackburn, R.N.

The attack was delivered at daylight, starting from a point in the vicinity of Heligoland. The seaplanes were escorted by a light cruiser and destroyer force, together with submarines. As soon as these ships were seen by the Germans from Heligoland two Zeppelins, three or four hostile seaplanes, and several hostile submarines attacked them. It was necessary for the British ships to remain in the neighbourhood in order to pick up the returning airmen, and a novel combat ensued between the most modern cruisers on the one hand and the enemy's aircraft and submarines on the other. By swift manœuvring the enemy's submarines were avoided and the two Zeppelins were easily put to flight by the guns of the "Undaunted" and "Arethusa."

The enemy's seaplanes succeeded in dropping their bombs near to our ships, though without hitting any.

The British ships remained for three hours off the enemy's coast without being molested by any surface vessel, and safely re-embarked three out of the seven airmen with their machines. Three other pilots, who returned later, were picked up, according to arrangement, by British submarines which were standing by, their machines being sunk.

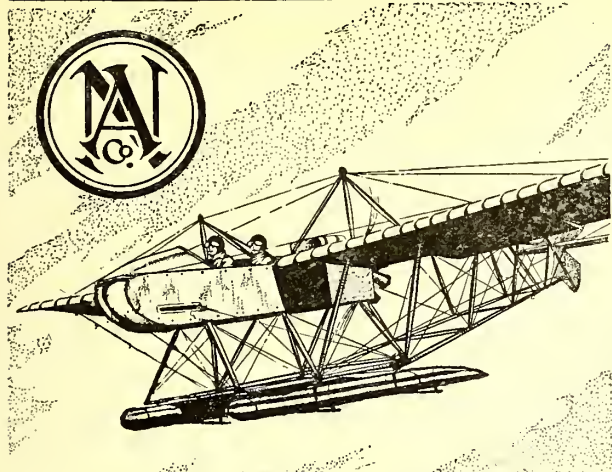
Six out of the seven pilots, therefore, returned safely. Flight Commander Francis E. T. Hewlett, R.N., is, however, missing. His machine was seen in a wrecked condition about eight miles from Heligoland, and the fate of this daring and skilful pilot is at present unknown. The extent of the damage by the British airmen's bombs cannot be estimated, but all were discharged on points of military significance.

* * *

Flight Commander Douglas Austin Oliver entered the Navy as a cadet in 1903, and attained the rank of lieutenant in 1909. He took his certificate in February, 1913, and attained his present rank in July last. He will be remembered as having a narrow escape of colliding with the cliff at Dover in a fog, when flying to the Spithead mobilisation. He saved his passenger and himself with great skill by doing a half loop and a cartwheel on his big Short seaplane.

Flight Commander Francis Esmé Theodore Hewlett, who was reported missing, is the only son of Mr. Maurice Hewlett. He became a naval cadet in January, 1904, was promoted lieutenant in January last, and made flight commander in July last. He took his pilot's certificate at Brooklands in November, 1911. His mother, who is a daughter of the Rev. G. W. Herbert, was the first British aviatrix. She obtained her certificate in August, 1911.

Later information states that two German destroyers were seen approaching Lieut. Hewlett's machine, so there is good reason to believe that he was picked up and made a prisoner of war.



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Flight Commander Robert Pell Ross entered the Service as a cadet in 1904, and attained the rank of lieutenant in 1910. He took his certificate at Upavon in February, 1913, and was made a flight commander in September last. He flew a Sopwith biplane at the Spithead mobilisation in July.

Flight Commander Cecil Francis Kilner is a Captain of Marines, and is 31 years of age. He was gazetted in 1899 and became lieutenant in 1903. Shortly after obtaining his captaincy last year he obtained his certificate as pilot at Upavon, and has been a flight commander since the end of October.

Flight Lieutenant Arnold John Miley entered the Navy in 1907 and became sub-lieutenant in 1910 and lieutenant a year later. He qualified as a pilot on a Bristol biplane on Salisbury Plain in July, 1913, and was appointed a flight lieutenant last July. He was Naval Secretary in the Naval and Military Aero-engine Competition this year.

Flight Lieutenant Charles Humphrey Kingsman Edmonds entered the Navy as a cadet in 1903 and obtained his aviator's certificate on a Bristol biplane on Salisbury Plain in April, 1912. He attained the rank of lieutenant in February, 1913, and his appointment as flight lieutenant is dated July last.

Flight Sub-Lieutenant Vivian Gaskeli Blackburn took his certificate at the Bristol Flying School, Brooklands, in September, 1913, and was appointed to a temporary commission in the Naval Air Service last August. He built himself a small biplane at Brooklands this year, and later flew well on the Flanders biplane.

All these officers flew Short biplanes of the folding wing type, which attracted so much attention about the time of the Aero Show this year.

* * *

Cuxhaven, the scene of the naval air raid on December 25th, is the outpost of the great maritime city of Hamburg, and lies 73 miles down the Elbe, at the meeting of river and sea, and is the gate through which till lately came and went a great proportion of Germany's foreign trade. The great harbour, from which the Hamburg-Amerika steamers sail, is 25 years old. Westward from Cuxhaven lies the promontory called the Kugelbaake, and off the Kugelbaake, about fifteen miles north-west in a line with Helgoland, lies the Scharhörn. To this point runs, past the island of Neuwerk, the deep channel that must be followed by West-going vessels in order to skirt the "Watten," the long belt of sandbanks which at this end stretch to Holstein and at the other form the chain of Frisian

islands. This barrier is familiar to English readers through the descriptions in "The Riddle of the Sands."

* * *

The Berlin "Lokalanzeiger" states that four English airmen on Christmas day flew over the North Sea island of Langeoog, a small island next to Norderney and a short distance from Wilhelmshafen, and threw four bombs on the west end, without, however, the German newspaper says, doing any damage. [This would appear to indicate a second raid not yet reported by the Admiralty, or if not it shows a state of nerves in Germany which does not exist in this country.—Ed.]

* * *

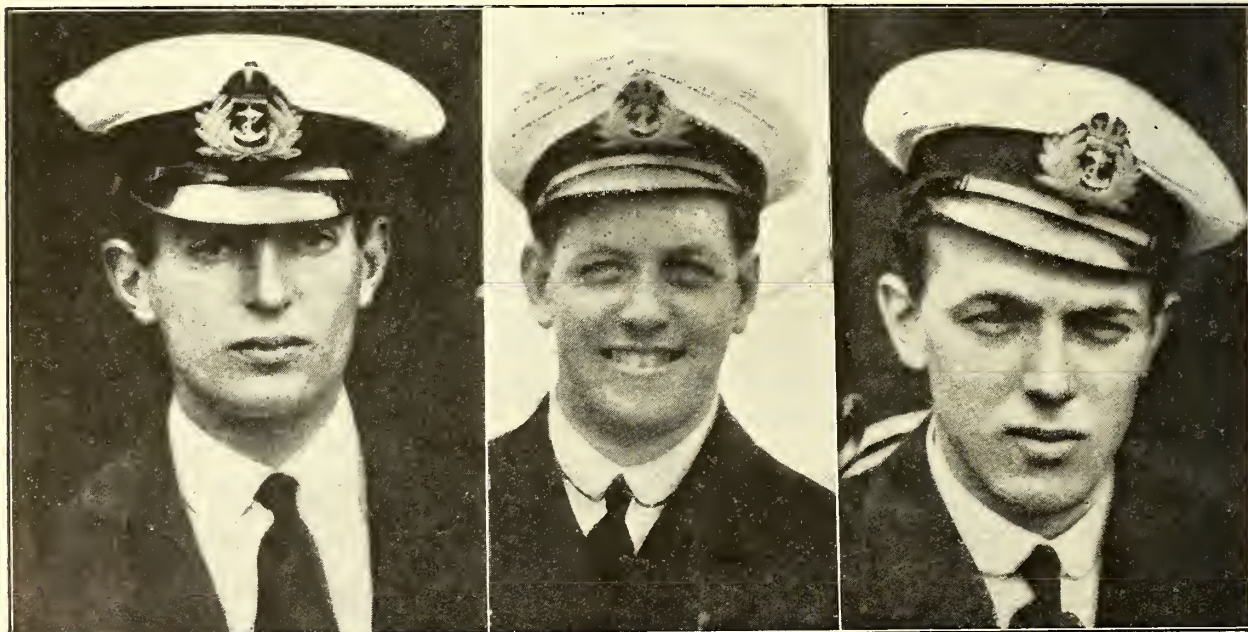
The Secretary of the Admiralty announces that on Thursday, December 24th, Squadron Commander Richard B. Davies, R.N., of the Naval Air Service, visited Brussels in a Maurice Farman biplane for the purpose of dropping twelve bombs on an airship shed reported to contain a German Parseval. Eight of these bombs, of which six are believed to have hit, were discharged at the first attack, and the remaining four on the return flight. Owing to the clouds of smoke which arose from the shed the effect could not be distinguished. [When first reported, this feat was attributed to Wing-Commander Samson, R.N. Squadron-Commander Davies will be remembered as visiting Somaliland early this year to investigate the possibilities of aviation there. Previously he did good work as second in command of the Royal Naval Flying School at Eastchurch.—Ed.]

* * *

The following unofficial information has been gathered concerning the German raid on Dover on December 24th: The machine arrived via Deal about 11 a.m., passed over Dover, missed the Castle with a bomb and hit the garden of Mr. Terson, behind St. James' Rectory. Various vitreous damage was done, a local gardener was blown out of a tree without being hurt, and a local cook was punctured by splinters of glass. Shortly afterwards a seaplane and two land-going aeroplanes appeared in pursuit of the German, but failed to catch him; which is another lesson in the need for high speed aeroplanes.

* * *

The following information has been gathered concerning the visit of the German aviator to Sheerness on Friday. The fog which had been thick all the morning, suddenly lifted at about 1.30 and the machine hove into sight at about 5,000 feet. The



THE CUXHAVEN RAIDERS.—Left to Right, Flight Commanders Oliver, Ross, and Hewlett.

Photographs by Birkett, Percy Road, Shepherd's Bush, W.

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local anti-aircraft defence force got to work and assailed the visitor with rifle, machine-gun and quickfirer. The aeroplane came up the river as far as Dartford, pursued by Naval machines, whence it doubled back, and disappeared into the mist. A large hole was discovered at Cliffe, five miles from Rochester, containing a quantity of scrap-iron, together with what looked like a metal handle, believed to be parts of a German bomb. Curiously enough, several reports allege the presence of two enemy aeroplanes, but one of our pursuing machines may have been mistaken for the second machine. Possibly someone may have been clever enough to recognise the Navy's only Albatros as being of un-British aspect.

* * *

While flying at the Royal Naval Air Station at Hendon on Thursday morning, December 24th, Sub-Lieutenant Ffield, of the Royal Naval Air Service, met with an accident and fell from about 150 ft. He received serious internal injuries and was removed to the City of Westminster Infirmary, Hendon, where he died the same evening. Sub-Lieut. Ffield was using one of the new "short-horn" type Maurice Farmans.

Bernard Osbourne Ffield was 21 years of age. He secured his aviator's certificate on December 10th on a Grahame-White biplane. He was a pupil of the Grahame-White School at Hendon, and lived at Carlyle Road, Edgbaston, Birmingham.

An inquest was held at Hendon on Monday concerning the death of the deceased officer.

Flight Lieutenant Eric Bauman said that Sub-Lieutenant Ffield had had his pilot's certificate for a fortnight. That meant that he was able to take charge of a moderately easy machine. The witness thought that he had flown alone on about ten occasions, if not more. The witness attributed the accident to an error of judgment, and explained to the Coroner that some machines, if taken down steeply, were more difficult to pull up than others, and this was one of them.

Flight Sub-Lieutenant F. W. Strong, who witnessed the accident, said that Sub-Lieutenant Ffield climbed straight up to about 2,000 ft., returning to the aerodrome. He appeared not to have left himself sufficient distance to reach the ground without gliding too far. In order to get down more quickly, he dived the machine steeply, and had not time to flatten out, with the result that he hit the ground. It was an error of judgment.

Sub-Lieutenant Hodsoll also agreed that the accident was due to an error of judgment. He said he had been in the machine an hour before the accident, and it was all right then.

Medical evidence was given to the effect that the cause of death was concussion of the brain.

A verdict of "Accidental death" was returned.

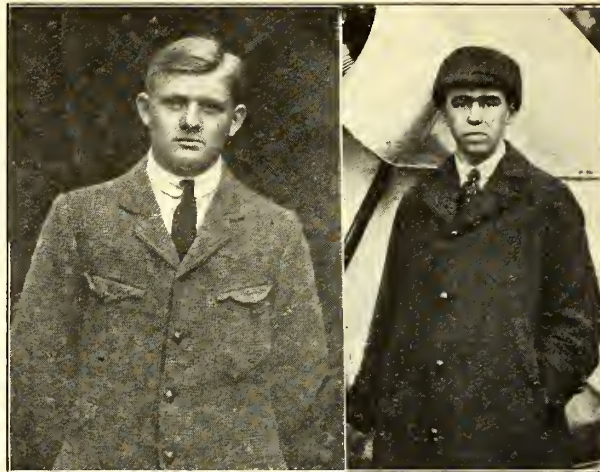
Full naval honours were accorded at the funeral on Tuesday. The first portion of the service was conducted by Father Leghorn in the Catholic Church, Hendon, and the body was conveyed on a gun-carriage from the church to Hendon Park Cemetery.

MILITARY.

The following passage from the report of the official Eye-witness, published on December 28th, deals with aircraft:—

Though the weather has been generally unfavourable to aviation, several reconnaissances have been made during the past week, and there have been three encounters in the air between British and German aeroplanes, as a result of which the hostile machine has in each case been forced to go down in the German lines. On one occasion our machine chased a Taube, and having attained the favourable position for shooting the observer emptied his automatic pistol at the enemy without any visible result at about 150 feet range. He then proceeded to take a photograph, and the appearance of the camera seems to have alarmed the German aviator, who at once fled.

Upon another occasion a somewhat difficult situation arose, when a bomb which was being dropped caught in a string and remained suspended three or four feet below the aeroplane. There was no way of reaching the bomb, and it was impossible to land. Finally, the observer kicked a hole through the floor of the fuselage, hooked the string with his foot, and shook it until the bomb fell off.



TWO MORE RAIDERS.—Flight Lieut. Miley, R.N., and Flight Sub-Lieut. Gaskell Blackburn, R.N.A.S.

The following announcements are issued by the Secretary to the War Office:—

THURSDAY, 1.55 p.m.

An enemy's aeroplane was seen over Dover this morning about 10.55. It dropped a bomb which fell in a garden and exploded, but did no damage. The aeroplane was only seen for a few seconds, and left again over sea. British aircraft went up at once, but did not see the enemy again. The weather was foggy and cloudy.

FRIDAY.

A hostile aeroplane was sighted to-day at 12.35 p.m. flying very high east to west, over Sheerness. British aircraft went up in pursuit and engaged the enemy, who, after being hit three or four times, was driven off seaward.

[The stories of these visits will be found under the Naval heading, as anti-aircraft work is under the control of the Air Department at the Admiralty.]

* * *

While descending in a spiral on a Farman biplane at Chelmsford on December 23rd, Lieutenants Murray and Milne, of the Royal Flying Corps, were about forty feet from the ground when the machine appeared to over-bank and came down suddenly into a ploughed field. Both officers were taken to the Chelmsford Hospital. They were cut about the face and bruised, and Mr. Milne was also suffering from concussion.

* * *

Everybody will be glad to learn that Mr. Robert Loraine is in London making excellent progress towards recovery after his injuries recently received at the front, but for the moment it is not permitted to say where he is being nursed. He is reported in the "Telegraph" to have given the following account of his casualty:—"I was wounded on November 22nd, in the middle of an important reconnaissance, by an anti-aircraft shrapnel shell (commonly known as an Archibald), when I was flying at a height of 5,000 ft. above the enemy's lines. My right lung was pierced from the base of my back, the ball coming out near my neck in front. As I had done nearly three to six hours' work in the air over the enemy for nearly three months I think I may consider myself pretty lucky. Although I was not expected to recover, I am now, as you see, doing extremely well, getting on, indeed, quite rapidly, and the doctors assure me my recovery will in the end be absolutely complete. I am returning to the front in about two months' time, with a beautiful single-seated long-distance machine, fitted with wireless, which will do about ten miles an hour more than the swiftest German Taube."

[One publishes this with all reserve, as it bears no resemblance to Mr. Loraine's usual manner of speech.—Ed.]

* * *

An officer of the R.F.A. writes:—"Aeroplanes buzz about every fine day, and they are the bane of one's existence. One is always having to make the men pop into their burrows like

so many rabbits so as to avoid being seen. The pits each side are about 5 ft. deep, 8 ft. long, and 4 ft. across. The top is logs covered with straw, brushwood, and earth. With straw to sleep on one is very comfortable."

* * *

A captain in the Royal Engineers writes:—"We see aeroplanes nearly every day, and generally they are being shelled. The aeroplane is surrounded with little puffs of white smoke, usually at a slightly lower level than the aeroplane itself. Each puff represents the burst of a shrapnel shell. Although I have seen at least a dozen of these performances I have never seen an aeroplane brought down.

"There is an anti-aircraft section of the artillery, armed, I believe, with a sort of pom-pom which fires little 1 inch shells in rapid succession. The French and Belgian aeroplanes throw out little pencil-shaped rods, which will kill a man if they strike him on the head, provided they are thrown from 200 ft. or over. Of course, the aeroplane is always much higher than that when flying over the enemy. But I don't think these projectiles do much damage, and the German aircraft don't use them. [The Germans have been using them largely.—Ed.] The chief use of aeroplanes is to direct the fire of the artillery.

"The men—in fact, every one of us—have got so used to seeing aeroplanes shelled fruitlessly that the sight of one surrounded with half a dozen little fat white puffs of smoke scarcely attracts a look. At first they all used to stop work, and often even expose themselves in their anxiety to watch the show; now they look upward when they hear the shells bursting high up in the air, murmur something about 'another blooming aeroplane,' and take no further notice."

[Sic transit gloria aeris.—Ed.]

* * *

On Wednesday afternoon, December 23rd, a ceremony took place at Farnborough when Lord Desborough, the chairman of the Imperial Air Fleet Committee, in the name of the Government of Australia, presented to the War Office representative a stable aeroplane of the B.E.2c. type, in trust, for the use of the Royal Flying Corps in the field. Mrs. Reid, wife of the High Commissioner for Australia, christened the machine. The guests were received by Mr. Mervyn O'Gorman and Captain T. O. Lyons, R.F.C. The aeroplane was named the "Liverpool," having been presented by Mr. Wm. Cain of that city.

FRANCE.

In the opinion of an aviator in the French flying corps, who has been let down badly on at least one type of machine, the British Avro and B.E. and the French Voisin have acquitted themselves best in operations in France.

* * *

It is good news to hear that the German "fortress" of heavy guns to the west of Reims, officially reported in a recent French official communiqué to have been silenced, was actually put out of action by the efforts of the Sergeant-Aviateur Louis Noel. The whole of his escadrille have followed his example in habitually flying at night to the annoyance of the Boches, who "can't or won't" do it.

* * *

German aeroplanes have been very active during the last few days in the North of France. One dropped several bombs on Bethune, but there were no victims and no damage was done. The aeroplane was brought down shortly afterwards near Vieux-Berquin. On Sunday, December 20th, a Taube appeared at Amiens about noon, and dropped two bombs which fell near the hospital. There were no victims.

* * *

A "Temps" correspondent at Nancy telegraphs a denial of the report that a Zeppelin airship has dropped bombs at Toul.

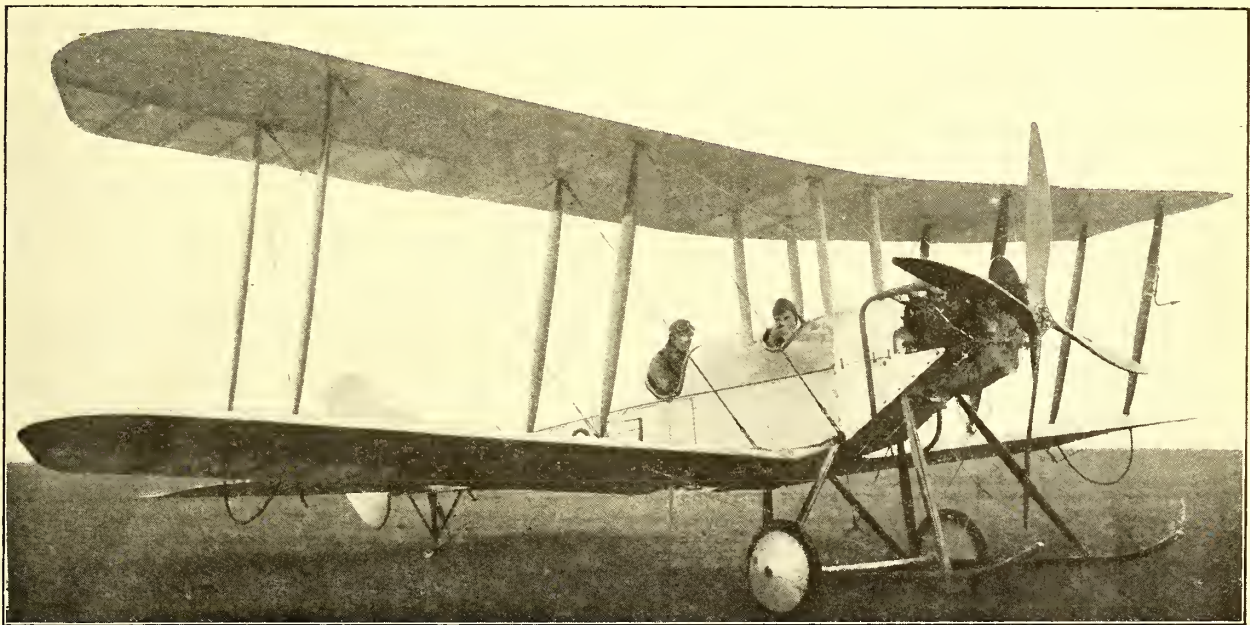
* * *

The "Journal" says a Taube which attempted to reach Paris on Sunday, December 20, was pursued by a French aviator, and had to descend at Pontoise.

* * *

The "Daily Chronicle" special correspondent, Mr. H. Donohoe, reported from Paris on December 27th:—A Zeppelin which made a raid on Nancy yesterday inflicted very little damage. The airship hurled some 15 bombs while making the tour of the city from west to east. Five or six bombs struck house-tops. One domestic, occupying an attic room, was mortally wounded, and a waiter who was in bed over a railway station was killed. Other German bombs fell in the street without injuring anyone.

French aviators were not long in taking revenge for this aerial raid on undefended Nancy. [Nancy is one of the great military stations of France.—Ed.] Four aeroplanes sped across the frontier and bombarded the barracks of St. Privat, near Metz, as well as one of the German aviation sheds. Several troops trains were sighted near Metz by the observant French



The B.E.2c. presented to the R.F.C. as related above. It is intended to be inherently stable, but it is notable as being the slowest modern aeroplane, and it is said to be difficult to recover from a nose-dive.

aviators. These, too, became a target for the aerial bombs. German anti-aircraft guns were turned against the French aeroplanes, but the latter, having laid the barracks in ruins and inflicted other damage on the enemy, succeeded in escaping, and safely reached their depot in French territory.

Mr. H. J. Greenwall of the "Express" paid a visit to an aeroplane camp forty miles from Paris. He says: "Arrived at a certain place shortly before midnight, we examined the anti-aeroplane guns which have caused more Taubes to change their mind than the public knows. . . Now and then an aeroplane was heard aloft, and through the window one saw the occasional flash of a searchlight. With dramatic gestures the officer showed how the anti-aircraft gun was sighted, and how it can apparently materialise the cowboy's boast that he could 'shoot round corners.'"

[An officer sighting an anti-aircraft gun with dramatic gestures might conceivably mistake the muzzle thereof for the breech—especially at Christmas time!—Ed.]

GERMANY.

The following German war news, officially circulated through German wireless stations, has been received in London dated from Berlin on Saturday:—

"On the evening of the 20th instant a French aviator threw nine bombs on a small village, although no troops were stationed there, and there was only a hospital, and it was plainly marked. No damage of any consequence was done. As a reply to this and the throwing of bombs on the open town of Freiburg, which is undefended and outside the zone of operations, our aeronauts threw medium-sized bombs on places on the outskirts of Nancy."

An official telegram received at Amsterdam on December 27th from Berlin says:—

"On December 25th, in the forenoon, a small British force made an attack by hydro-aeroplanes on our estuaries and dropped bombs on some anchored ships and one gasometer in the neighbourhood of Cuxhaven without hitting or damaging anything.

"After dropping the bombs the British aviators disappeared in a westerly direction. Our airships and aeroplanes engaged the British forces and dropped bombs on two British destroyers and one convoy vessel. On the latter fire was observed to break out. Misty weather prevented any further engagement taking place.

BEHNKE,

"Acting Chief of the Admiralty Staff."

Berlin telegrams received at Amsterdam on December 27th state that the British attack on Cuxhaven has caused the greatest excitement. The damage done by the British seaplanes is strictly hushed up, and German official reports carefully minimise it. The general impression in Germany is that the British Navy wishes to retaliate for the East Coast raid, and is beginning a new policy of maritime aerial attacks, which are bound to bring about an early and decisive naval engagement. One can assure the Germans, however, that this was all arranged long before their attempt on the East Coast. The German public criticise the inefficiency of the mine field in the Helgoland Bight, through which the British cruisers so easily made their way.

German Main Headquarters report from Berlin on Sunday, December 27th, as follows:—The British War Office reports that an enemy aeroplane was sighted the day before yesterday over Sheerness, and it was followed by three British aviators, who fired shots at it. They tried to cut off its escape, but its speed was too great, and it disappeared in the fog hanging over the sea.—(German Wireless.)

[Again one sees the advantage of speed, and yet people order B.E.2c.'s.—Ed.]

A telegram from Strasburg states that on December 22nd, between 3 and 4 p.m., a hostile aviator appeared over the city and dropped a bomb on one of the suburbs, damaging a shed and smashing the windows of a shop. Some of the splinters of the bomb fell in the river, but nobody was hurt.

The aviator, who flew at a height of between 1,500 and 1,700 metres, was fired at by the garrison without any visible effect.

German journals received in London about December 23rd contain a full account of an interview granted by Grand Admiral von Tirpitz to the Berlin representative of the United Press of America. With regard to aircraft in general, Admiral von Tirpitz expressed himself as being personally in favour of aeroplanes for naval service. But, of course, Zeppelins were far superior for carrying heavy loads for long distances. For the moment he was unable to say which of the two types would prove to be the more effective under given weather conditions, but both of them were used for different purposes.

A correspondent of the "Times" lately in Germany writes:—"It is the Zeppelins which go to their heads. They place their hope in this air-fleet which is going to bring destruction and, at the outset, cause immense panic among the English sailors, soldiers, and civil population. This is more or less nonsense and bluff. If a Zeppelin wishes to escape the English anti-aircraft guns it would have to rise to such a height that a ship on the water would look like a star in the universe; an impossible thing, as the Zeppelins can only reach a limited height. The damage they can do to the Fleet is, therefore, probably very small and would merely be a matter of good luck. Besides, they have not many air cruisers to spare for such a risky affair."

The "Daily Chronicle" of December 24th relates the following story:—

A great deal has been said in the German papers about the so-called "Naked Flier." It was reported that an English airman had compelled a German soldier, who had been taken prisoner and robbed of his clothes, to get into his aeroplane and to fly with him over the German positions and betray them to him.

According to the "Vorwaerts" (quoted by Reuter), the man, whose name is given as Erich Callies, has now made a sworn statement. He is in hospital in Leipzig, and is suffering from fever. The "Vorwaerts" does not suggest delusions or delirium, but gives the story as a narration of facts, without any hint that the man may have even exaggerated.

The fever patient says he was ordered to point out where the Germans were below, and to drop bombs on them, but he refused. He was not without clothes; he had on his full foot wear, trousers and drawers, two cotton shirts, and a red woollen jacket, but he was rightfully cold, and suffered severe pains.

The doctor says he will not be restored to health for about three months, though the flying episodes occurred about two months ago—Callies is not sure of the date.

[A friend of THE AEROPLANE who has just returned from Germany states that this story is firmly believed by the German people, who are, somewhat naturally, furiously indignant at the cruelty of such an act. It is hardly worth while to deny the story, for obviously no British officer would commit such an atrocity, which is only worthy of the lowest class of Prussian officer. In any case, it is not explained how the soldier got back to Germany. Our friend says that in Germany it is believed that the aeroplane was brought down and the cruel pilot captured. Probably the whole thing is a pure invention, simply used as an excuse for harshness to British prisoners.—Ed.]

It was reported from Berne on December 22nd that another Zeppelin had begun trials at Friedrichshafen.

RUSSIA.

It was reported from Petrograd on December 26th that five German aeroplanes dropped bombs on Sochaczew, setting fire to numerous wooden houses and destroying a market. One bomb burst in the middle of a crowd, killing eight persons and wounding 26. The total number of victims was above 100.

ITALY.

It is reported that the new military airship V, from which a speed of 65 miles an hour was expected, has now been

thoroughly tested. The speed attained was not so brilliant as was hoped, and the best speed of the ship is put down at 58 miles per hour, which still leaves her by far the fastest airship in the world.

AUSTRIA.

An official message from Vienna states that on December 25th hostile seaplanes made a flight over Pola. Fire was opened on them from all the forts, but they succeeded in escaping.

BELGIUM.

It was rumoured in Holland on Sunday that a Zeppelin sighted over Nieuport in the morning was shot at by the Allies, and all the occupants were killed in the debris of the airship as it descended. [Probably "after it had descended" would be more correct.—Ed.]

Mr. Percival Phillips, the "Express" special correspondent on the Belgian Frontier, reported on Wednesday, December 23rd: "I have reason to believe that the German airmen have begun using Zeebrugge as a base for aerial raids on the English coast. A reliable informant tells me that a large hangar capable of housing a number of aeroplanes has been erected near the Heyst tram station, in addition to a water-plane landing stage previously reported. German marines say that an airman flew across the Channel during the week-end."

Mr. G. F. Steward of the "Daily News" reported from Rotterdam on Tuesday that at 10 p.m. on Dec. 21st an aeroplane from the Allies' lines flew over Bruges, and, with a searchlight, picked out places on which to drop three bombs. Terrific explosions followed, but the damage done is not yet known.

The "Daily Chronicle" special correspondent in Belgium reported on December 22nd that early on December 21st a German aeroplane passed over Ypres, and dropped a smoke-bomb over the Civil Hospital to give the German artillery the range. Soon afterwards shells began to fall on the hospital, wounding 24 women and children who were patients, or inmates of the almshouse there. This new bombardment also wrecked many buildings around the hospital, which had hitherto escaped. The people of Ypres have fled, some to Dunkirk, others to Furnes and La Panne.

The same correspondent reports that M. Deschamps, one of the most famous of the 12 Belgian military aviators, met a tragic fate on December 21st. When returning from a flight to an aerodrome near the coast his aeroplane landed heavily. The concussion exploded a bomb that he was carrying, and he was blown to pieces. About a dozen spectators were wounded.—[It is, in fact, doubtful whether Belgium has 12 aviators left.—Ed.]

HOLLAND.

A telegram from Vlieland, at the north end of the Zuider Zee, states that on December 23rd a Zeppelin passed over the island of Vlieland, coming from the west. It disappeared in a north-easterly direction. This was evidently one of the regular North Sea patrols.

NORWAY.

A telegram from the town of Skien states that on December 21st an airship passed, first eastward, then in a direct southern direction, between 8.15 and 10.15 a.m. Some people suggested that it was a mirage, but the most general opinion was that it was a Zeppelin engaged in making observations. As a matter of fact, it was probably one of the regular patrols which the Germans keep in the Baltic as a guard against probable British raids by sea.

SOUTH AFRICA.

An official telegram from South Africa says:—A Taube monoplane coming from Aus (German South-West Africa) went as far as Rothkuppe and returned, flying high and wide. It was unable to approach our camps owing to big gun fire. No shells were dropped.

[It appears that the Germans really have some aeroplanes in South Africa, and one hopes to hear before long that the officers of the South African Defence Force who recently passed through the Central Flying School are operating against them with success. In such case one hopes to hear our pilots are equipped with really fast machines and not with B.E.2cs.—Ed.]

AUSTRALIA.

Writing on the subject of ramming airships, Mr. Vincent P. Taylor, the Australian aviator-aeronaut, sums the matter up very tersely when he says: "Good aeroplanes are hard to get, good aviators are also hard to get, and a good man is no good dead; he is wanted for further work."

Mr. Taylor says that, in preference to ramming an airship and trying to jump from the wreck of the machine with the aid of a parachute, he prefers the idea of a trailing wire as advocated by Mr. Cody, which would drag a bomb onto the airship. As one of the most experienced parachutists in the world, Mr. Taylor's opinion is well worth having.

A letter received by Mr. Taylor from Cairns, Queensland, states that Mr. Jones's Caudron, on which he has been doing good exhibition work during the past few months, has been destroyed by fire. A mechanic was soldering something with a blow-lamp when in some way the machine took fire, and, as Mr. Taylor puts it, "up it went in smoke." Fortunately the machine was partly insured.

Mr. Taylor goes on to relate that he met M. Guillaux in Melbourne some little time ago. M. Guillaux was off to Europe on the "Asterley" to join his unit of the French army. His Blériot, on which he has done so much splendid work in Australia, he left behind.

On Saturday, September 26th, Mr. Taylor took up the small dirigible belonging to Mr. A. J. Roberts. He started from the show-ground at Melbourne at 7 a.m. in a fairly strong wind, and after manoeuvring round the ground he headed in the direction of Broadmeadows Camp. Here he reached an elevation of about 2,000 feet. The wind had by then increased somewhat, and noticing clear ground below to the left, Mr. Taylor headed for it with the intention of landing. He managed to get down safely at a place called Resenoir, though the wind made landing operations difficult. The ship is 80 feet long and does about 14 m.p.h. with a 15-h.p. engine. Mr. Taylor says she handles pretty well.

PERSIA.

A Persian firm, having been asked by a German manufacturing firm, in a letter which took 50 days to deliver, to send their orders as usual, the Germans promising to deliver goods "somehow" via the German Ambassador at Teheran, the Persians retorted that the only possible route for German goods was via Rumania, Bulgaria, and Turkey, to Trebizond, and thence by caravan to Tabriz; so they advised the Germans to "consider the idea of sending the goods by Zeppelins, which travel so well and distribute bombs gratis to the peaceable inhabitants of European towns." In the meantime, they state they are very well supplied by Russia. Hardly the soft answer which turneth away wrath!

U. S. A.

Mr. Secretary Daniels, of the Navy General Board at Washington, in his recent annual report to President Wilson, makes the following observations in relation to aircraft:—

Aircraft have demonstrated in the present war in Europe that no military arm is complete which lacks them. They will not replace vessels of war, but will extend the field of operations to the air as well as on the surface of and underneath the water. They provide the best means for discovering submarine mines, and have now become an indispensable naval adjunct.

Orders were given early in the year for some foreign-built aeroplanes, in addition to larger orders for aeroplanes made in this country. Unfortunately, the war made it impossible for the orders placed abroad to be filled, and the trial of such craft must be postponed. The best types of American manufacture have been ordered, and the Department will develop this modern branch of the naval service steadily and rapidly.

In our present condition of unpreparedness, in contact with any foe possessing a proper air service, our scouting would be blind. We would be without the means of detecting the presence of submarines or mine fields, or of attempting direct attack on the enemy from the air, while our own movements would be an open book to him. The General Board cannot too strongly urge that the Department's most serious thought be given to this matter, and that Congress be asked for an appropriation of at least 5,000,000 dols. for the purpose of establishing an efficient air service.

Notes on Floats for Waterplanes.

By E. W. WAKEFIELD.

What are the points of a good float? Are there any points which all good floats have in common? Well, it is said: "Any fool can make a float that will rise from the water, but no fool can make a float that will alight on the water"—easily and safely, that is. The saying probably arose from a "mot" of M. Henri Fabre's, the father of French waterplanes, and, like most of his sayings, it has much truth in it.

One has to remember the pressure on a float. Often five square feet of it, or less, are in the water at speeds at which the air lift is almost nil. If, then, the machine "all up" weighs only 1,000 lbs., the pressure will be 200 lbs. per square foot. To this must be added a part of the propeller thrust.

There are machines weighing twice as much, and causing a pressure of 400 to 500 lbs. per square foot. Even this can be provided for on the rise. But in alighting the water is struck at perhaps 40 miles an hour, and at that speed water is no spring mattress. As long ago as 1908 M. Tellier measured this pressure, and found it to be about seven times the weight of the machine. It may easily run up to something like a ton per square foot. Hence one of the great advantages of a light over a heavy machine. It puts so much less strain on its floats.

It was by realising this that the Englishman, Gnosspelius, was the first man in the world to fly a hydro-monoplane, for we must remember that the Blériots flown by M. Archdeacon and others on the Seine, between 1905 and 1910, were biplanes.

But, says some wiseacre, if the pressure per foot be too great, let the pilot distribute it by taking the water with a larger area of the float. A fatal suggestion! for at that speed the water cannot get out of the way, and at once sets up a violent suction, throwing the machine suddenly forward on to its nose, just as when one applies a front wheel brake too suddenly on a bicycle. The better way to lessen the alighting jar is to spring the float on to the undercarriage, as was done in most of the more reliable machines at Monaco.

Floats are generally divided in France into: (1) Fabre-type, and (2) catamarans, or Curtiss-type floats. In England the tendency is rather to divide them into: (1) floats with hydroplane step or steps, and (2) floats without. The truer classification would be into: (1) floats so shaped as to raise the machine into the air automatically when it reaches its flying speed—or, shortly, automatic types; and (2) floats that have to be pulled out of the water by engine-power and the use of elevators. Hydroplane steps, air-tubes, etc., are merely aids to lessening suction, and may or may not be used with either type, although more commonly used with the automatic type. And this will, I think, be found to be the type of the future.

It is objected that this type will not stand waves. This has been true up till recently, but will be less so every month. It is objected that this type will not rise from troubled water. This also has been true up to now, and it may be a little longer before the difficulty is overcome. The real objection is that this type requires much more skilled and careful designing. Any sort of a shaped float may be lugged out of the water, given enough engine-power. But for a float to rise automatically is quite another thing. It must be made with just the right angle at every part. To lift before the machine reaches flying speed is almost as bad as not to lift soon enough, because when the machine finds herself in the air with insufficient support from the wings she is bound to drop back on to the water with a big splash, if not a nasty jar, each time she lifts.

It has been objected that the automatic principle is wrong, because it presupposes still air, or at least a constant wind. But in practice this is not found to be so. It is merely necessary, when rising into a head wind, for the pilot to keep his elevator a little down as he approaches flying speed; but when rising, with a following wind, he must keep it back, and, so to speak, help the float a little. In fact, I think it would be generally correct to say that a waterplane usually cannot rise with a following wind unless fitted with an automatic float.

Float Shapes.

Now a word as to the general shape of waterplane floats. Omitting the Léveque and other flying-boat machines, which are an interesting and quite distinct class by themselves, and,

strictly speaking, do not use a float in the usual acceptation of that term, it will be found that nearly all the serviceable floats are flat-bottomed—not boat-shaped—in the water. For instance, the Fabre, the Curtiss, the Tellier, the Henri Farman, the Maurice Farman, the Borel, the Deperdussin. In length, and width, and shape of upper surface they vary almost indefinitely, but all tend to a flat bottom, and especially so at the stern. In this respect they differ from every kind of flying-fish, but not altogether from some waterfowl, which are remarkably flat astern.

Another interesting point which diverse floats have in common is that the sides are usually perpendicular, or nearly so, and also parallel to one another. The two well-known exceptions are: (1) the Maurice Farman and (2) the Wright. The Maurice Farman widens out in front (and deepens) for weight-carrying. There appears to be no insuperable objection to this, and it has the great advantage of materially reducing the variation of the angle of incidence of the planes during the period between starting from rest and taking the air. The reason why this form has not been more used probably is because it adds considerably to the weight of the float, without a proportionate increase of buoyancy. No doubt the object of Wright in widening out his float astern was to increase buoyancy with the least possible addition of weight. Such a float must be an efficient hydroplane if it is to be a success, because to have a wedge to force through the water is a serious drag to getting up speed.

The upper surface of floats is usually made more or less "whale-backed," partly to prevent oil, water, etc., lodging on it, and also because an attractive and "finished" appearance is thereby given to the structure.

The front is often provided with some contrivance to lessen the risk of a nose-dive, such as the rounded breast of the Curtiss, the inclined plane of the Farman's, the ears of the Nieuport, and the front adjunct steps of Gnosspelius and the Lakes Flying Co.

Float Dimensions.

As to dimensions, one would naturally think: make them as long as possible to secure longitudinal stability, and counteract the nose diving tendency due to the direction of the engine thrust; as narrow as possible to avoid suction; and as shallow as possible to avoid unnecessary displacement.

With regard to the first point—length—I have experimented with floats up to 32 ft. long, but for general utility I find 12 ft. a good average length, and should not recommend anything under 9 ft. or over 15 ft. long.

With regard to the second point—width—I have tried various widths, from 1 ft. 10 ins. to 6 ft. 6 ins. Five to six feet is a useful width for a single float, but unless there is a big reserve of engine-power, steps must be taken to counteract the suction if the float be made wide.

Given length and width, the depth fixes itself when you have decided the buoyancy required. Buoyancy should never be less than twice maximum load. A safe rule is to make it three times the expected load. But always remember, if you want a light float (say, to keep under 1 lb. weight for every 25 lbs. buoyancy), you must make most of the depth astern; whereas, if you want only small variations in the angle of incidence of your planes, you must put up with a heavier float, having its main buoyancy in front.

The Promised Invasion.

A German gentleman in Rotterdam has given the correspondent of the "Telegraph" the benefit of his opinion as follows:—"The cruisers which appeared off Yarmouth the other week were simply ascertaining whether such a feat was feasible. To the suggestion that a fleet of transports would be at the mercy of the battleships and cruisers he replied that the popular German view was that it was not impossible to devise a scheme which would keep such vessels out of the way. An escort of submarines could, the Germans think, do this if aided by Zeppelins, which are engaged in battle practice against warship targets."

From the U.S.A.

Mr. Alfred W. Lawson, writing in the September number of an American paper which calls itself "Aircraft," makes some extraordinary observations on the capabilities of aircraft in relation to the present war. It is natural that an aeronautical journalist should wish to claim the best possible performances for his pet vehicles, but some of Mr. Lawson's remarks are distinctly "tall." For instance, he puts the travelling capacity of "an aeroplane with full war equipment" at 600 miles, as if that were a fair average. As a matter of fact, aviators would be well pleased if they could be assured of a 150 miles radius (300 miles out and home).

Again, the Zeppelin airships "could actually make the French Army at the front a negligible quantity if permitted to operate without restriction by flying completely over the troops and using explosives to put out of commission the French bases of supplies and ammunition, etc." Unfortunately, the Zeppelins are very severely restricted by an adequate provision of machine guns, infantry platoons, high-angle guns, armed aeroplanes, and other unpleasant things. It would be just as profitable, and much nearer the truth, if one argued that were it not for the restrictions imposed on the French infantry by the presence of the German Army, they could enter Germany and wipe all the Zeppelins and their sheds off the face of the earth.

Mr. Lawson considers that the only bulwarks between France and annihilation are her aeroplanes and airships—though, in fact, the latter are practically non-existent.

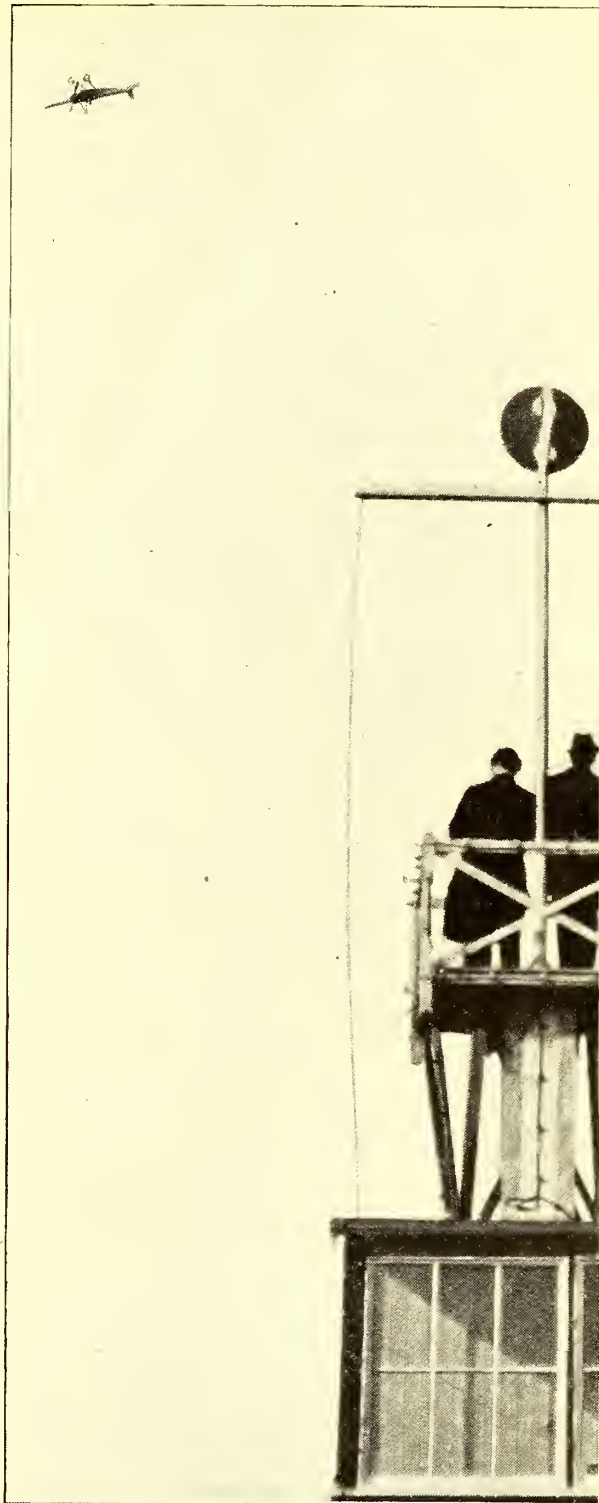
Comparing the two types of aircraft, he states that the Zeppelin has the following astounding advantages. It "has an approximate lifting capacity of about fifty tons, and is capable of staying up in the air for more than forty-eight hours at a stretch. It is able to cover more than twelve hundred miles with its war load, and is capable of hovering over any particular point. It is also capable of carrying a more powerful wireless outfit than the aeroplane and also more men, guns and ammunition. It can also navigate in fog or darkness, and, incidentally, the very latest Zeppelins are noiseless. It can rise to a height of about ten thousand feet, which is considerably higher than necessary to keep out of the way of land batteries, and it is also capable of rising to that height in less time than the heavy military aeroplane. Its speed will run from fifty to sixty miles an hour."

Some of the performances ascribed to Zeppelins have actually been achieved, but, in most of these cases, the ship has been specially prepared for the particular feat, and no single craft could possibly approach the combined performance during a single flight. The term "lifting capacity" is vague, but whether it represents gross tonnage or net useful load, its inaccuracy only varies in degree. Incidentally, 10,000 feet is well inside the range of high-angle guns, and a Zeppelin at 10,000 feet is vastly easier to hit than an aeroplane at 5,000. It is 500 feet long instead of 30, and its speed is about 50 m.p.h. instead of 80.

Mr. Lawson continues:—"It is claimed by the adherents of the Zeppelin airship that owing to its being able to carry heavier guns it will be enabled to put out of commission any number of aeroplanes with shot and shell before they can get within striking reach of the dirigible. The latest Zeppelins are mounted with guns on all sides, bottom, top, and either side, so that from whatever angle they engage the enemy they can pepper him at a distance. Furthermore, they claim that before an aeroplane can climb to a position above them they can be miles away from it, and, again, that the aeroplane which climbs much over 10,000 feet has about used up all its energy for either fight or travel."

It is extremely improbable that a Zeppelin could stand up to the recoil of the lightest Q.F. gun firing shell, and it would have to be content with machine guns. On the other hand, 1½-pounder guns have been successfully carried on aeroplanes. Guns "on all sides" of a Zeppelin would cause it to burrow into the earth with great rapidity, and any really first-class aeroplane can beat a Zeppelin at climbing, unless, of course, the airship jettisons all its ballast, living and dead, and even then the aeroplane would go higher in the end.

At the foot of this illuminating article appears a company of N.C.O.s and air-mechanics of the Royal Flying Corps, labelled



A REMINISCENCE.—A "straight" photograph of the late Mr. Gustav Hamel looping on his Morane at Hendon. The photographer on the pylon is looking into a reflex camera, hence his apparent lack of attention.

"English Military Aviators." It is hardly surprising, if this is a specimen of American "technical" journalism, that people in the "States" are badly informed on aeronautical matters.

FROM DENMARK.

THE AEROPLANE'S Danish correspondent writes:—

The North Sea aviator, the Norwegian flight-lieutenant Tryggve Gran, has made another fine oversea flight on his Blériot monoplane. With a lieutenant as his passenger, he has flown 150 miles along the Norwegian coast.

Norway being fully a mountain country, the aviators have had hard conditions for flying here; yet much fine work has been done by the Naval and Army pilots. Best known are officers Dons (Rumpler dove hydro-monoplane), Captain Sem-Jacobsen (Maurice Farman biplane), and officer Thaulow (Blériot monoplane), and the civil aviators Roald Amundsen, the discoverer of the South Pole (Maurice Farman biplane), Tryggve Gran, the Antarctic navigator, Scott's companion (Blériot monoplane), Engineer Jule-Hansen (Deperdussin monoplane), and Engineer Lie (Grade monoplane). Now the Norwegian aviation had its first accident not long ago, which hit the Army aviator, Lieut. Klingenberg, who was badly injured. He flew the Maurice Farman biplane, "Ganger Rolf," which has been given to the Army by Norwegians living in France.

And from Denmark the news to be told are that the Naval flight-lieutenants Høeck and Laub have made numerous long and high flights on Levêque flying boats. Laub reached a height of 1,050 metres, Høeck 2,000 metres high, which is a Scandinavian record and may even be a world record for flying boats, it took him 59 minutes to take the rather heavy Levêque flying boat to that height, while the descension was made in "vol pique" in 2½ minute!

In a patrol flight across Oresund, between Copenhagen and Helsingor, in very stormy weather, the Danish-built Levêque flying boat, "Maagen II" (Seagull) piloted by Lieut. Laub was capsized by a wave when alighting, he hung to the fuselage and was rescued by a steamer after some swimming. The current carried the flying boat out on the sea of Kattegat, where it was rescued by a submarine under the command of Prince Axel.

A private announcement to the Swedish newspaper "Svenska Dagbladet" tells that a German aviator on October 16th bombarded the telephone head central at Warsaw, owned by a Swedish Co. At 5 o'clock in the afternoon a bomb hit the tall fire wall of the telephone station, damaged rather many cables, blew the glass roof, so that the many rattling bullets frightened the ladies. After the bombardment the authorities ordered the Company to close the station; so 32,000 private lines were suspended, and only the most important official lines were still served. But in a week the service was renewed to its full extent, and the building is now protected against further aerial bombardments by another special roof above the glass one.

The present war has taught the Swedish Military authorities how useful the aeroplanes are, wherefore aviation is being taken up to a big scheme, managed by the well-known pioneer aviator Baron Cederstrom, of the Scania Vabis works (aircraft department), and the Swedish Aircraft Co. turn out Farman biplanes and some monoplanes day and night. In half a year Sweden will possess 70 aeroplanes and 80 aviators, and in a year both numbers will have doubled.

Seth-Jensen, whose name has been mentioned in the papers as one of the brave men to whom Joffre and France owe thanks, writes:—Toul, November 16th: It is now a little more than 3 months ago that I was accepted as a French soldier. When the war began, I was busy testing new aeroplanes for the works at the aerodrome of Chateaufort, but already on the first day of mobilization I offered my voluntary service in Paris on Place des Invalides. The first 6 weeks I had almost but to transport the aeroplanes from right to left and to disassemble them. The big centres d'aviation are at Dijon, Paris, Tours, Etampes and St. Cyr, and we had plenty of work.

Then I moved at length to active service and belong now to the garrison at Toul where is the depot of an escadrille de aeroplanes. We pilot some small, fine "monoplans-monoplaces," which rise quick and attain a speed of 120 km. in the hour.

Our task is reconnoitring, to use our eyes and to report everything we see, to the headquarter, to indicate the enemy's positions, to find out where troops and artillery are gathered, to tell when they move their troops and in what direction their

railway trains run. In each flight we carry with us 1,600 little steel arrows and two melenit bombs each weighing 10 kg.

The German prisoners state that we do them much harm, for whenever our aeroplanes appear, their troops move quick and scatter over the country. Our depot is 20 km. off the German lines—and I pay them a visit every day.

The Swedish-American Professor Westergren has arrived in Stockholm to offer Sweden an aeroplane constructed by himself, which is claimed to be the smallest one yet made. Inclusive the aviator, Westergren's aeroplane weighs only 500 kilogram; the motor has 12 cylinders, and the aeroplane can fly with only 7 of them in function. Professor Westergren has earlier offered the Swedish Government his inventions, but got a refusal then. So he has arrived personally this time, bringing a model with him correct in all details; in America he has made 50 flights with his full-sized aeroplane.

The Vienna newspapers tell of the exploit of an Army pilot: An Austrian aeroplane flew on October the 1st under unfavourable weather conditions and under continuous shooting from the Russian artillery, the planes were perforated by three bullets from the headquarter to the fortress of Przemysl, where the aeroplane landed safe after one hour's flight. The passenger, an officer from the headquarter, brought important verbal orders, and the aeroplane carried too big quantities of letters and newspapers. On the return flight, which took place on October 6th, the aeroplane was again shot at violently by Russian shrapnells and the planes were hit 8 times, no harm being done however. The aeroplane was caught in a snow-storm and the petrol tube broke, so that the observer all the time had to clasp the leakage to secure sufficient petrol for the continuation of the flight, and the headquarter was not reached till four hours' hard flying, where the observer announced the leading officers of important news which could not have been trusted to the wireless telegraph.

The Austrian and German aerial troops work together, the German war correspondent Leonhard Adelt at the Russian-Austrian-Hungarian theatre place of war brings a long report of which is only worth rendering, that as the Austran aeroplane works, as the Lohner-Daimler and Lloyd Cos. cannot satisfy the demand, German aeroplanes are used to a big extent from D.F.W., L.V.G., Albatros and Aviatik, the two latter having branches at Vienna. Three German aeroplanes have been flown 16,000 kilometres on actual service one 1,700 kilometres in 7 days.

When the "Times," 30th October issue tells that there are reasons to believe that Danish firms try to buy in England those silk fabrics as are used for airships and then sell them to Germany, it suffices to announce that the exterior airship fabric is a special, heavy, yellow-prepared sort (to counteract the injurious influence of the sun) quite different from the Chinese silk fabrics England exports to Denmark for ladies' dresses. Examinations here at Copenhagen have given no results justifying. The "Times" in setting those accusations forth, and moreover the paper in the copy and even in the same column disproves them most effective by giving announcement of two bills passed by the Danish parliament to secure the biggest possible impartiality in the trade with foreign countries.

Peter Uffi is the third Dane to do aerial and voluntary service in the war on French side; he went to Paris last Spring to learn to fly, but instead he studied at the aeronautical academy, and now serves partly as an observer and partly as tecknich. In a postcard from Soissons, dated October 15th, he tells that he is stationed at Crox de Fer, near Soissons, and that he daily takes part in patrol flights over the hostile positions as an observer.

Writing of the aeroplanes' prestations he tells that their sure workings is rather astonishing; like automobiles they work on minutes. The escadrilles make use of a new signal system, found out after the commencement of the war, consisting of visible plates, placed below the planes, in which way the artillery fire is guided.

A telegram from Petrograd, October 4th, tells that the French aviator, Poiret, in Russian service, has been decorated with the Russian Military Cross as a token of honour for his brilliant and dangerous patrol flights for the Russian Army, fighting in Austria.—ERIK HILDESHEIM.

Over-Sea Flying.

The "Scientific American" makes some rather interesting suggestions on the subject of navigating aeroplanes over the sea, particularly with relation to calculating drift and speed of translation. The momentary geographical direction of translation of the craft over the surface of the ocean, regarded as stationary, may be determined by noticing the apparent line of transit of wavelets or floating objects past the machine, or across the field of a telescope carried by the observer. If the objects have but slight speed across the course, say 1 per cent. of the seaplane's speed on her course, the resulting deviation may be neglected. By night luminous objects may be projected ahead of the machine, and under favourable conditions one may sight back to the luminous object and check the course as compared to a compass needle, with accuracy to, say, one degree.

A practical arrangement would be to fit a lens in the bottom of the cockpit and bring the image of the sea to focus on a level ground glass above it, or on a vertical or oblique plate with an oblique mirror between the lens. Reference lines and a graduated arc on the plate may serve to measure the direction of travel as compared with the longitudinal axis of the machine or the needle of a compass. The speed of the machine through the air is read on the air speed indicator and her inclination to her oversea course is noted. She is then headed into the wind, i.e., so that wavelets seem to move fore and aft, and the angle of her turn is noted on the compass. From these three observations a triangle is determined, giving the over-water speed of the seaplane. If the seaplane's altitude be known, her over-water speed may be found from the speed of the ocean's image moving across the field of the instrument described above. In misty weather the water-speed could be calculated by flying low and trailing a light log line. These suggestions may prove quite practical if used as supplements to the usual nautical instruments.

The Stylist.

The "newspaper novel" is a thing apart, but "Night Wings" by Mr. Morice Gerard is an epic. His remarks on silent aeroplanes will thrill the probationary flight sub-lieutenants of the R.N.A.S.

"Over the resonance of the waves, which alone broke the stillness of the night, came that distinctive sound, once heard never to be forgotten, unlike anything else in the universe—the throbbing of an advancing aircraft.

"Charteris had studied every development at home and abroad of the conquest of the air. He knew that as yet absolute silence was out of the reach of attainment, although every stride forward trended in that direction. The sound which came to him represented the last word in comparatively noiseless motion, but even this could not fail to make itself heard, especially amid the hush of night. . .

"He was assured that the vessel was not of English make, consequently it was alien."

Exit the "Blue Bird."

Habitues of Brooklands in the past will learn with regret that Mrs. Billing, the proprietress of the "Blue Bird," has left. When the Military Authorities took over the aerodrome the "Blue Bird Restaurant" was turned into a canteen, with Mrs. Billing in charge. Now the place has been entirely taken over by the Army. Mrs. Billing's experience of aviators and their queer ways is so extensive that she is capable of dealing with the breed where other people could not, so one hopes to see her return to her former sphere of activity either at some other place, or to Brooklands again when the war is over. It is possible that she may start a private hotel near some centre of the aeroplane industry, in which case she may be sure of plenty of custom.

Southampton and District.

Flying has been unusually quiet during the past week. A land machine passed over Hamble on Thursday at a great height, flying north. Maurice Farmans have been busy between the showers, and Sopwith tractors have also been flying well.

The air station near Gosport has been busy with land machines, the pilots often coming over to Southampton.

A Poet Aviator.

One of the pupils successfully trained at the school of Messrs. Pashley Bros. and Hale is Mr. Clarence Winchester, well known on the South Coast for his articles and poems. In the early days of THE AEROPLANE, Mr. Winchester ("Ornis") acted as correspondent to this paper. Strange to relate, Mr. Winchester was educated for the Church, but took to journalism, subsequently going on the stage, and now becoming a species of sky pilot different from that originally intended. His latest poem, published in a society paper, is to the R.N.A.S. and R.F.C.



Mr. and Mrs. Clarence Winchester on the Pashley "pusher" biplane, on which Mr. Winchester recently took his certificate.

Cinematography Extraordinary.

The "Daily Sketch," which has lately made some astonishing aeronautical howlers, weighs in with the following piece of description:—The cinematograph, I am told, is performing admirable scout's work for the military authorities at the front. Taken from an aeroplane 6,000 feet skywards, by means of a telescopic lens, the disposition and movements of troops can be clearly recorded. Then the film is developed in a motor-bus specially fitted up as a dark room, whilst on its way to headquarters, being ready to be shown to the strategists in an hour. The post of operator is one of danger, for he sits with his camera in the front of the aeroplane, making a comparatively easy target for the enemy marksmen. In any case, it is very cold "Christmassy" work.

[This is evidently a fifth-hand garbled version of either the Autophote or the Fabbri automatic cameras.—Ed.]

Our New Sparklets.

A lady who has long been interested in aviation, and who is a regular reader of this paper, relates that she had carefully explained recently to an old lady her interest in aeroplanes generally. The only comment the old lady made was, "But surely, my dear, you don't really intend to go up in one of those 'aerated vessels'!"

Modern Advertising.

The ways of advertising agents are beyond the understanding of man. The firm of whom complaint was recently made as the agents of a "royal" nerve tonic have been displaying a photograph of the late Mr. Gaudron, under the title of "Men of Action." This publicity must be painful to the widow and friends of the late balloon pilot, and it does not seem a particularly happy recommendation for the use of the tonic, for the unfortunate aeronaut died at an early age, from disease, in his bed.

Incidentally, the same firm recently used as advertisements testimonials from M. Blériot and M. Henri Farman, labelling both these manufacturers as belonging to the French Military Aeronautical Service, under the title of "Flight Pilot of the French Air Service." Neither of them is, in fact, flying on active service, and no such title is known.

Reduced Prices of Specifications.

Messrs. Browne and Co., British, Foreign and Colonial patent and trade mark agents, of 9, Warwick Court, Holborn, W.C., write:—"It may be of interest to your readers to learn that by a notice appearing in the "Illustrated Official Journal (Patents)" of December 9th the prices of printed specifications of inventions is to be reduced from 8d. to 6d. per copy, including inland postage. This reduction is to come into force on and after January 1st, 1915.

"It may be recalled that when the Government first printed specifications of inventions the charge per copy varied according to the number of pages of letterpress and number of sheets of drawings, the result being that in some cases a copy of a single specification cost as much as £1 or £1 5s. When the uniform charge of 8d. was introduced this charge applied to all specifications, including those previously published at a much higher price, and the new charge of 6d. will also apply to all specifications."

New Companies.

The undermentioned particulars were taken from the "Daily Register" compiled by Jordan and Sons, Ltd., Chancery Lane, W.C. :—

Goodchild and Company, Limited (138,089).—Regd. Oct. 23rd. To carry on the business of manufacturing and dealing in motor cars, lorries, wagons, motors, cycles, boats, aeroplanes, hydroplanes, etc. Nominal capital, £2,100 in 2,000 £1 preference shares and 2,000 1s. ordinary shares. First directors shall be appointed by subscribers. Qualification of directors, 25 shares; subscribers, 1 preference share each.—Marguerite L. Spencer, 96, Albert Road, Walthamstow, secretary; R. F. Jebitt, 3a, Fieldhouse Road, Balham, engineer.

Hawkins' Patent Propeller Company, Ltd. (138,012).—Registered October 19th. Marine and aviators' engineers, accessory makers, fitters and repairers, etc. Nominal capital, £1,000, in

£1 shares. First directors to be appointed by subscribers. Subscriptions (1 share each). W. D. Grimson, Springfield House, Chelmsford, Physician and Surgeon; J. B. H. Low, "Tullamore," Chelmsford, Quantity Surveyor.

New Lithoid, Ltd. (137,751).—King Edward Square, Sutton Coldfield, Warwick. Registered September 22nd. To carry on business of working the secret or patented process for covering metal and other substances with celluloid, and the invention for the manufacture of wheels for use as hand-wheels or steering wheels, and to enter into agreement. Nominal capital, £14,000, in £1 shares. Directors: Chas. A. Vandervell, Warple Way, Acton Vale, Middlesex; Morris Greenberg, 8, Water Lane, London, merchant; Francis R. Wade, 95, Colmore Row, Birmingham, constructive engineer; (above directors shall retain office so long as they each hold 1,000 shares.) Subscribers (1 share each), Morris Greenberg and Francis R. Wade.

School and Weather Reports.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Hendon ...	Fine	Fine	Fine	We	Fine	Wet	Wet
East Coast ...	Wet to Fine	Fine	Fine to Wet	Du ^l	Fine	Wet	Changeable
South Coast...	Show'y	Rain	Rain	Fine	Fine	Foggy & Rain	Fine to Rain

Hendon.—AT THE GRAHAME-WHITE SCHOOL.—Instructors: Messrs. Manton, Winter, Russell and Shepherd. Pupils with instrs.: Probationary Flight Sub-Lieuts. Digby, Reed (new pupil), and Walmsley. Strts. alone: Probationary Flight Sub-Lieuts. Driscoll and Mills. Circs. alone: Probationary Flight Sub-Lieuts. Dalison, Driscoll, Mills, and Young. Certificates taken: Prob. Flight Sub-Lieuts. Young and Dalison.

AT THE HALL FLYING SCHOOL.—Instructors: Messrs. J. L. Hall and J. Rose. Pupils: Mr. E. W. Connochie (20 strts.), Mr. Lloyd Williams (12 flights at 25 ft.), Mr. A. Davy (4 strts.), Mr. Waterson (8 strts.). Machines: Hall tractor biplanes.

AT THE BEATTY SCHOOL.—Instrs.: Messrs E. Baumann and W. Roche-Kelly. Pupils with instr.: Lieut. Bannatyne (54 mins.) and Messrs. Cyril Leeston-Smith (39), Newberry (34), Anstey-Chave (64), G. Merton (49), G. Beard (30), G. Donald (27), G. Perrot (20), J. F. Roche (39), B. de Meza (34), J. V. Miller (38), J. H. Ormsby (45), A. G. Hayward (10). G. Virgilio has been out by himself every day putting in a lot of practice previous to taking up his duties as instr. in this school. Machines: 40 h.p. Wright biplane and 50 h.p. Gnome engined biplane, both fitted with "dual" control.

AT THE LONDON AND PROVINCIAL AVIATION CO.'S SCHOOL.—Instrs.: Messrs. W. T. Warren and W. G. Smiles. Pupils strts and rolling alone: Messrs. Laidler, Abel England, Derwin and Moore. Machines: L and P. Tractor biplanes. A new 35 h.p. tractor passed into use after satisfactory tests.

Shoreham.—AT THE PASHLEY BROS. AND HALE SCHOOL: Instructors: Messrs. E. and C. Pashley. Pupils with instructor: Messrs. G. Charley, A. Goodwin, and J. Sibley. Straights: Mr. J. Morrison, 8's and circs.; Messrs. C. Winchester, J. Woodhouse, T. Cole, and Menelas Babiottis. Certificates taken: Messrs. J. Woodhouse, C. Winchester. Machines: Pashley and H. Farman.

Windermere.—AT THE NORTHERN AIRCRAFT CO.'S SCHOOL.—Mr. W. Rowland Dng busy teaching either in pilot's or passenger's seat on Monday, Tuesday and Thursday. Pupils with instr.: Messrs. Lashmar (170 mins.), Raiton (105), Mackrow (15), Ashley (10), and Parkyn (10). The school closed down for the holidays on Friday, and remainder of week spent in increasing adipose tissue, etc.

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PUPILS required to assist in the designing of airships, sheds, docks, safety arrangements, working drawings and calculations, draughting-out of patent drawings and specifications, etc. Small premium, progressive salary.—WULF-RING, Aeronautical Engineer, 25, Hogarth Road, Earl's Court.

WANTED, Competent Gnome Engine Mechanics. Permanent positions if satisfactory.—State wages and experience, Grahame-White Aviation Co., Ltd., London Aerodrome, Hendon.

AEROPLANE Fitters and Erectors wanted immediately.—Send references and rate required to White and Thompson, Ltd., Middleton, Bognor.

AEROPLANE Draughtsmen with experience of detail work required immediately.—Please send references, full particulars of experience, and salary required, to White & Thompson, Ltd., Middleton, Bognor.

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JOINER, first class refs., good timekeeper; previous aeroplane experience; reliable workman; requires situation. Box No. 615, THE AEROPLANE, 166, Piccadilly, London, W.

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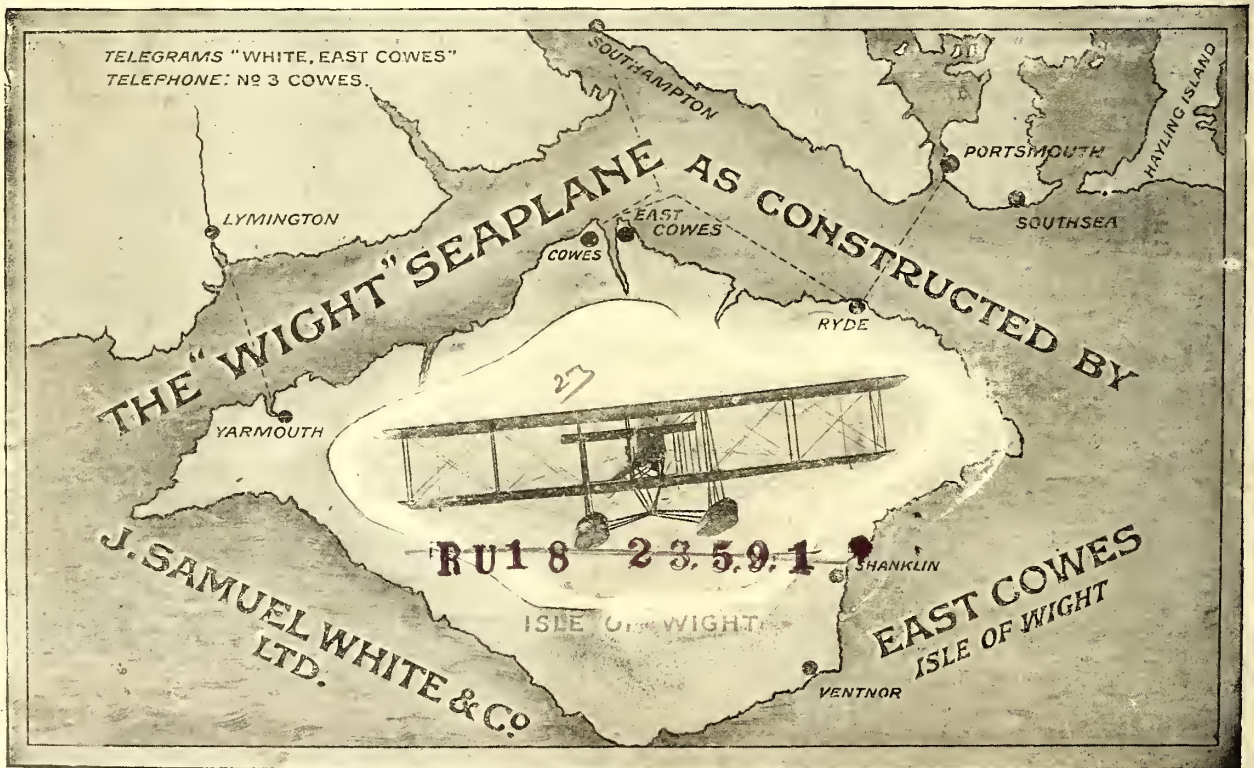
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